PART A

IONOSPHERIC DATA

ISSUED
FEBRUARY 1961

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 198
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
23 Feb. 1961

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

There is no indication on the graphs of the relative reliability of the observed data; it is necessary to consult the tables for such information.

The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1959.

Smoothed Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	145	140	136	132
1960	128	124	120	118	115	112	107					

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina·
Buenos Aires, Argentina
Decepcion I.
Trelew, Argentina

Commonwealth of Australia, Department of the Interior:
Macquarie I.

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
Canberra, Australia

University of Graz:
Graz, Austria

Belgian Royal Meteorological Institute:
Dourbes, Belgium
Lwiro (Central African Institute for Scientific Research)

Escola Politecnica, University of Sao Paulo:
Sao Paulo, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Inverness, Scotland
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
St. John's, Newfoundland
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

French National Center for Telecommunications Studies:
Dakar, French West Africa
Djibouti, French Somaliland
Kerguelen I.
Tahiti, Society Is.
Tananarive, Madagascar
Terre Adelie

Heinrich Hertz Institute, German Academy of Sciences, Berlin:
Juliusruh/Rügen, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany
Tsumeb, South West Africa

Ionospheric Institute, Breisach, Germany:
Freiburg, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland
Hollandia, Netherlands New Guinea
Paramaribo, Surinam

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

General Directorate of Telecommunications, Mexico:
El Cerillo, Mexico

Telecommunication Administration, Oslo, Norway:
Svalbard, Norway

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Lycksele, Sweden
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Sottens, Switzerland

National Bureau of Standards (Central Radio Propagation Laboratory):
Byrd Station, Antarctica
Talara, Peru (Instituto Geofisico de Huancayo)

ERRATUM

CRPL-F197(A), p. 6, Table 35: (M3000)F2 at 23 should read (3.00).

Tabulations of Electron Density Data, Puerto Rico, September and October 1960, are expected to appear in CRPL-F(Part A) for March 1961.

TABLES OF IONOSPHERIC DATA

JULY 1960 - NOVEMBER 1955

Table 1

Resolute Bay, Canada (74.7° N, 94.9° W) — July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(490)	5.3	31	240	3.4	100	2.20		2.05
01	(460)	5.2	31	240	3.4	100	2.20		3.00
02	(395)	5.1	31	220	3.4	100	2.20		2.75
03	410	5.1	31	230	3.7	100	2.30		2.70
04	395	5.1	31	215	3.8	100	2.40		2.85
05	400	5.0	31	220	3.9	100	2.50		2.70
06	460	5.1	31	220	4.0	100	2.80		2.70
07	465	5.0	31	210	4.0	100	2.90		2.70
08	500	5.0	31	200	4.2	100	3.00		2.50
09	500	5.1	31	200	4.4	100	3.10		2.50
10	510	5.0	31	200	4.5	100	3.20		2.50
11	505	5.3	31	200	4.5	100	3.20		2.45
12	510	5.2	30	200	4.5	100	3.30		G
13	510	5.2	30	200	4.5	100	3.30		2.35
14	470	5.4	27	200	4.5	100	3.20		2.50
15	505	5.3	20	200	4.5	100	3.20		2.40
16	445	5.4	30	200	4.3	100	3.10		2.50
17	450	5.2	29	200	4.3	100	3.00		2.50
18	430	5.4	29	210	4.1	100	2.90		2.60
19	420	5.2	30	210	4.0	100	2.75		2.60
20	395	5.4	30	220	4.0	100	2.60		2.60
21	(390)	5.4	30	230	3.6	100	2.40		2.75
22	(410)	5.4	30	230	3.4	100	2.30		2.90
23	---	5.3	30	240	---	100	2.20		2.90

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 2

Kiruna, Sweden (67.8° N, 20.3° E) — July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)	7	320				4.4	(2.65)
01	---	(5.0)	9	320	---	---	---	4.3	(2.6)
02	---	5.0	12	335	---	---	---	4.0	2.6
03	(370)	5.4	13	260	3.3	---	---	4.4	2.6
04	400	5.2	18	240	3.6	105	2.3	4.0	2.6
05	410	5.2	23	240	4.0	105	2.6	4.0	2.6
06	435	5.6	22	230	4.2	110	2.8		2.6
07	430	5.6	22	225	4.4	105	3.0		2.6
08	400	6.0	24	215	4.6	105	3.0		2.6
09	430	5.8	25	215	4.7	105	3.1		2.6
10	425	6.0	25	215	4.8	105	3.2		2.6
11	420	6.2	27	210	4.8	105	3.2	3.8	2.6
12	420	6.0	26	210	4.9	105	3.2	3.5	2.6
13	425	6.0	26	220	4.8	105	3.2		2.6
14	440	6.0	26	220	4.8	105	3.2		2.6
15	410	5.9	25	215	4.8	105	3.1		2.7
16	365	5.8	26	215	4.6	110	3.0	3.0	2.8
17	360	5.8	26	230	4.4	105	2.8	3.0	2.8
18	(340)	6.0	24	240	4.0	110	2.6	3.1	2.8
19	(295)	5.9	24	250	3.6	110	2.4	4.0	2.8
20	---	5.8	21	260	---	110	2.0	3.6	2.8
21		5.3	17	280		---	---	3.8	2.8
22		5.2	10	305		---	---	4.0	(2.8)
23		5.0	11	335		---	---	5.0	2.6

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 3

Sodankyla, Finland (67.4° N, 26.6° E) — July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.6)	5	310		---	----	(3.6)	(2.75)
01		(5.7)	5	335		---	----	(3.5)	(2.65)
02		(5.6)	6	335		---	----	(3.4)	(2.60)
03		(5.7)	4	290		---	----	(3.6)	----
04		5.1	13	270	---	---	----	(3.7)	2.55
05		5.2	12	250	3.7	115	2.55	(3.6)	2.60
06		5.6	18	245	4.0	110	2.80	(3.7)	2.55
07		5.4	23	220	4.2	110	3.00	(3.7)	2.65
08		5.7	19	220	4.5	110	3.20	(4.0)	2.60
09		5.9	23	215	4.7	110	3.30	(4.2)	2.50
10		6.2	25	220	4.8	110	3.40	(3.9)	2.60
11		6.3	21	220	4.9	100	3.50	(4.0)	2.65
12		6.5	23	210	4.9	110	3.45	(4.9)	2.65
13		6.2	19	210	4.9	---	----	(4.9)	2.55
14		6.3	21	220	4.9	---	3.40	(4.1)	2.70
15		6.4	22	215	4.8	110	3.35	(4.2)	2.75
16		6.2	21	220	4.8	110	3.30	(4.4)	2.00
17		6.2	22	230	---	115	3.10	(4.0)	2.75
18		6.0	18	230	---	110	2.90	(4.1)	2.85
19		6.0	21	240	---	115	2.70	(3.9)	2.05
20		6.2	23	250		120	2.50	(3.5)	2.90
21		5.9	18	260		120	2.35	(3.3)	2.80
22		5.6	10	280		---	----	(3.3)	(2.85)
23		(5.6)	5	310				(3.2)	(2.75)

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 4

Lulea, Sweden (65.6° N, 22.1° E) — July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.1	18	300				2.3	2.7
01	---	5.1	16	300	---	---	---	(2.5)	2.6
02	(395)	5.3	16	285	3.1	---	2.0	2.1	2.7
03	450	5.0	12	280	3.3	140	2.2		2.6
04	430	5.0	16	245	3.7	140	2.4		2.7
05	425	5.3	13	240	4.0	125	2.7		2.6
06	450	5.6	15	240	4.2	115	2.9		2.6
07	440	5.8	13	230	4.4	115	3.1		2.6
08	410	6.0	11	230	4.7	110	3.3		2.6
09	400	6.4	8	230	4.8	105	3.4		2.6
10	395	6.4	7	225	4.9	105	3.8		2.6
11	440	6.3	9	225	4.9	105	3.6		2.5
12	415	6.3	9	210	5.0	105	3.6		2.6
13	410	6.3	10	215	5.0	105	3.6		2.6
14	400	6.3	8	220	4.9	110	3.4		2.7
15	420	6.1	8	225	4.8	110	3.3		2.65
16	400	6.0	7	240	4.6	110	3.3		2.7
17	(380)	6.2	7	240	4.5	115	2.9		2.8
18	---	6.2	7	250	---	---	2.8	3.0	2.8
19	---	6.2	6	250	---	---	---	2.5	2.9
20		6.2	9	255		140	2.3	2.3	2.8
21		5.8	13	270		---	2.0	2.2	2.8
22		6.0	15	280		---	---	2.7	2.7
23		5.3	14	310				(2.4)	2.7

Time: 15.0°E.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 5

Lycksele, Sweden (64.6° N, 18.8° E) — July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	27	300		---	----	3.3	2.5
01	---	5.1	27	305	---	105	----	3.0	2.5
02	365	5.4	26	295	2.8	---	1.55	3.6	2.5
03	415	5.0	26	270	3.2	100	1.80	3.4	2.4
04	380	5.3	27	250	3.6	100	2.10	3.9	2.5
05	410	5.3	20	240	4.0	105	2.40	4.2	2.6
06	455	5.3	29	230	4.2	100	2.70	4.7	2.5
07	435	5.8	27	230	4.5	100	3.00	5.0	2.4
08	435	6.0	29	220	4.7	100	3.20	4.5	2.5
09	430	6.1	29	220	4.0	100	3.30	4.7	2.5
10	405	6.4	27	220	5.0	100	3.40	5.0	2.6
11	430	6.4	28	210	5.0	100	3.50	4.0	2.5
12	420	6.5	29	205	5.0	100	3.50	5.2	2.6
13	405	6.3	27	215	5.0	100	3.50	5.2	2.6
14	410	6.4	28	215	5.0	105	3.40	5.0	2.6
15	400	6.2	20	220	4.9	105	3.30	5.0	2.6
16	390	6.2	28	225	4.8	105	3.20	4.0	2.65
17	340	6.2	28	235	4.6	105	2.90	3.6	2.7
18	(320)	6.1	29	240	4.3	105	2.60	4.6	2.7
19	---	6.3	28	250	4.0	105	2.30	4.0	2.75
20	---	6.2	28	260	---	105	2.00	3.3	2.7
21		6.0	28	265		105	1.80	2.7	2.7
22		5.8	28	285		110	1.50	3.2	2.6
23		5.3	27	300		105	----	2.4	2.5

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.
Occasionally, 1.4 Mc to 16.0 Mc in 6 minutes, automatic operation.

Table 6

Nurmijarvi, Finland (60.5° N, 24.6° E) — July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.2)	4						----
01		(5.9)	4						----
02		(5.2)	5						(2.70)
03		(5.6)	8						(2.70)
04		5.5	11		---				2.70
05		5.7	15		3.6		----		2.70
06		5.7	19		4.0		2.60		2.70
07		5.8	24		4.4		----		2.70
08		6.2	23		4.5		3.10		2.70
09		6.5	24		4.8		----		2.75
10		6.7	25		4.0		----		2.80
11		6.6	29		5.0		----		2.75
12		6.8	27		5.0		----		2.75
13		6.6	26		5.0		----		2.80
14		6.6	29		5.0		----		2.80
15		6.6	28		5.0		----		2.80
16		6.6	28		4.8		----		2.80
17		6.3	29		4.6		----		2.80
18		6.3	25		---		----		2.90
19		6.3	26				----		2.90
20		6.3	21				----		2.90
21		6.6	19				----		2.90
22		(6.8)	7				----		(2.90)
23		(6.4)	5						(2.80)

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 7

Upsala, Sweden (59.9° N, 17.6° E) July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.2	26	280		115	E	2.2	2.6
01		5.8	24	290		110	E	2.2	2.55
02	---	5.5	20	305	---	110	E	2.4	2.55
03	370	5.3	24	290	2.8	105	1.50	3.1	2.5
04	410	5.5	27	260	3.5	(105)	2.10	3.5	2.55
05	385	5.8	26	245	3.8	105	2.40	4.5	2.6
06	415	5.9	26	230	4.3	105	2.70	5.0	2.6
07	400	6.1	24	225	4.5	105	3.00	5.5	2.6
08	405	6.2	27	225	4.7	100	3.20	5.5	2.6
09	395	6.8	26	215	4.9	100	3.30	5.5	2.7
10	390	7.0	26	215	5.0	100	3.50	5.6	2.6
11	400	7.0	28	210	5.1	100	3.50	5.8	2.7
12	395	7.0	27	215	5.1	100	3.50	6.7	2.7
13	390	7.0	28	210	5.1	100	3.50	5.8	2.65
14	390	6.9	27	215	5.0	105	3.50	5.5	2.5
15	300	6.8	28	220	4.9	105	3.30	5.4	2.7
16	360	6.0	29	215	4.0	105	3.20	5.0	2.7
17	365	6.6	28	230	4.5	105	3.00	5.0	2.75
18	(330)	6.0	27	240	4.3	105	2.70	4.5	2.0
19		6.6	26	250	---	(105)	2.30	3.2	2.0
20		6.7	23	260		(105)	1.80	2.7	2.8
21		6.7	23	260		110	1.40	2.5	2.7
22		6.9	23	265		115	1.20		2.7
23		6.7	23	280		115	E		2.6

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.
Occasionally, 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 8

Churchill, Canada (58.8° N, 94.2° W) July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.8	29	290				5.3	----
01		4.6	25	300				5.1	
02		4.3	27	305				4.4	
03		4.6	28	300		---	1.85	3.7	
04	---	4.5	28	295	---	115	2.00	>2.1	----
05	(470)	4.6	27	270	3.5	110	2.45		----
06	525	4.6	22	250	4.0	105	3.05	2.8	G
07	765	4.6	24	250	4.3	105	3.30		G
08	530	5.2	22	225	4.5	100	3.40		G
09	G	5.0	27	220	4.7	100	3.60	4.0	G
10	560	5.3	28	230	4.8	100	3.60		2.50
11	490	5.4	29	220	4.9	100	3.80		2.30
12	495	5.6	28	210	4.9	100	3.85		2.60
13	530	5.7	30	210	5.0	100	3.80		2.50
14	495	6.0	29	210	4.9	100	3.70		2.55
15	450	6.3	30	220	4.8	100	3.55		2.65
16	425	6.3	29	215	4.8	105	3.30		2.70
17	400	6.3	31	230	4.6	105	3.10		2.70
18	385	6.0	31	250	4.3	105	3.00		2.75
19	380	5.8	31	285	4.0	110	2.90	3.5	2.85
20	---	5.2	31	300	---	125	2.70	3.6	2.75
21		5.1	30	<320		130	(2.15)	4.6	----
22		5.0	30	300		---	----	6.8	----
23		4.8	31	300				6.5	----

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 9

Inverness, Scotland (57.4° N, 4.2° W) July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	30	300				<1.3	2.60
01		5.7	30	300				1.3	2.60
02		5.2	30	300		120	1.10	1.2	2.60
03		5.0	29	300		120	1.30		2.60
04	---	5.1	30	295	---	120	1.80		2.65
05	470	5.2	29	250	3.5	120	2.30		2.65
06	420	5.6	28	250	3.9	110	2.60	2.7	2.75
07	400	5.8	27	230	4.2	110	3.00		2.80
08	405	6.0	31	220	4.5	110	3.20		2.75
09	430	>5.0	30	230	4.7	105	3.40	3.5	2.70
10	420	6.4	26	220	4.8	105	3.50	3.0	2.70
11	400	6.6	28	220	5.0	105	3.70		2.70
12	415	6.4	26	220	5.0	105	3.80		2.65
13	400	6.4	28	220	5.0	105	3.70		2.75
14	425	6.4	28	220	5.0	105	3.70		2.70
15	425	6.3	30	220	5.0	105	3.60		2.70
16	400	6.5	30	220	4.8	110	3.40		2.75
17	400	6.5	28	240	---	110	3.20		2.80
18	---	6.4	30	250	---	110	2.90	3.2	2.80
19	---	6.5	31	250	---	120	2.50	2.8	2.85
20		6.7	29	260		130	2.15	2.4	2.05
21		6.6	30	260		---	1.70		2.80
22		6.6	31	270				<1.6	2.65
23		6.6	30	280				<1.6	2.65

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 10

De Bilt, Holland (52.1° N, 5.2° E) July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.3	31	275				2.0	2.70
01		6.0	30	280				2.1	2.65
02		5.7	31	295				2.3	2.60
03		5.3	31	290				2.4	2.65
04	(370)	5.4	29	270	(3.4)	---	1.8	2.3	2.75
05	355	5.8	31	245	3.8	105	2.3	2.8	2.85
06	370	6.2	30	230	4.3	100	2.8	3.3	2.90
07	360	6.5	27	215	4.7	100	3.1	3.7	2.90
08	395	6.5	31	205	5.0	100	3.3	4.0	2.80
09	400	6.7	31	210	5.1	100	3.5	4.2	2.75
10	350	7.2	31	210	5.2	100	3.7	4.5	2.90
11	370	7.2	30	210	5.4	100	3.8	4.4	2.80
12	375	7.2	31	200	5.4	100	3.9	4.3	2.00
13	360	7.0	31	200	5.3	100	3.9	4.2	2.80
14	360	6.8	31	205	5.3	100	3.8	4.0	2.90
15	340	6.8	30	205	5.1	100	3.5	3.9	2.90
16	325	6.9	31	210	5.0	100	3.4	3.6	2.90
17	300	7.0	31	230	4.7	100	3.0	3.7	2.95
18	290	7.0	30	230	---	100	2.6	3.1	3.00
19	270	7.0	31	260		110	2.2	3.3	3.05
20	---	7.1	31	250		---	1.6	2.2	2.95
21		7.1	31	250				2.7	2.80
22		6.9	31	260				2.3	2.75
23		6.7	31	265				2.4	2.75

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 11

Slough, England (51.5° N, 0.6° W) July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6	30	200				1.2	2.65
01		6.2	30	290				<1.1	2.55
02		5.7	31	300				1.1	2.55
03		5.5	31	300		---	----	1.4	2.60
04	---	5.2	31	300	---	---	<1.60	1.9	2.65
05	400	5.6	31	255	3.6	120	2.15	2.3	2.70
06	370	6.1	31	245	4.0	110	2.70	2.9	2.75
07	305	6.1	30	230	4.4	105	3.10	3.3	2.80
08	370	6.4	30	220	4.7	100	3.40	3.8	2.75
09	375	6.8	29	210	4.9	100	3.55	4.2	2.80
10	390	7.0	31	210	5.1	100	3.70	4.4	2.75
11	370	7.1	30	210	5.2	100	3.80	4.5	2.75
12	385	7.1	31	205	5.2	100	3.80	4.2	2.70
13	390	7.0	30	205	5.2	100	3.00	4.4	2.80
14	370	7.0	30	210	5.1	100	3.70	4.0	2.00
15	370	6.8	29	220	5.1	100	3.60	4.0	2.75
16	355	6.8	31	225	4.0	100	3.45	3.7	2.80
17	340	7.0	29	235	4.6	105	3.20	3.3	2.05
18	320	7.2	29	245	---	105	2.80	3.0	2.90
19		7.2	30	260		115	2.40	2.8	2.95
20		7.1	31	260		---	1.75	2.1	2.90
21		7.2	29	255				1.8	2.00
22		7.2	30	255				(1.7)	2.70
23		7.0	30	<260				<1.6	2.65

Time: 0.0°.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 12

Winnipeg, Canada (49.9° N, 97.4° W) July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.5	23	310					2.70
01		4.2	21	310				2.0	(2.65)
02		4.2	22	305				2.5	2.70
03		3.8	23	310				2.7	2.60
04		3.8	24	310		---	----		2.70
05	(300)	4.2	24	295	3.1	120	2.00		2.80
06	480	4.6	23	250	3.7	115	2.40		2.05
07	505	5.0	24	230	4.1	110	2.90		2.60
08	475	5.2	26	220	4.4	100	3.20		2.50
09	490	5.3	27	215	4.6	100	3.40		2.60
10	530	5.4	30	200	4.0	100	3.60		2.50
11	500	5.6	26	210	4.9	100	3.70		2.50
12	500	5.8	26	200	5.0	100	3.80		2.40
13	530	5.6	27	210	5.0	100	3.80		2.40
14	490	5.9	27	210	5.0	100	3.00		2.60
15	500	6.0	27	210	4.9	105	3.70		2.55
16	430	6.2	20	220	4.8	100	3.50		2.70
17	400	6.1	29	225	4.7	110	3.30		2.70
18	390	6.2	30	230	4.3	110	3.00		2.70
19	325	6.5	29	250	3.9	110	2.50		2.00
20		6.2	20	200		125	2.05		2.85
21		6.1	27	275		---	----		2.00
22		5.5	27	290					2.80
23		4.9	24	300					2.75

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 13

St. John's, Newfoundland (47.6° N, 52.7° W) July 1960*

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	16	290					2.60
01		4.6	18	295					2.70
02		4.0	15	300					2.70
03		3.6	15	300					2.60
04		4.0	13	270					2.75
05	---	4.4	16	230	---	---	---		3.00
06	390	5.1	17	220	4.1	100	2.8		2.80
07	420	5.6	18	200	4.4	100	3.1		2.80
08	380	5.7	17	200	4.6	100	3.4		2.80
09	390	6.1	16	200	4.9	100	---		2.70
10	435	6.0	18	205	5.0	100	3.7		2.70
11	420	6.6	16	205	5.0	100	---		2.60
12	390	6.6	19	200	5.0	100	3.8		2.75
13	400	6.7	15	200	5.0	100	3.6		2.75
14	365	6.6	17	200	5.0	100	3.6		2.75
15	400	6.6	18	200	4.9	100	3.4		2.70
16	350	6.6	18	205	4.5	100	3.2		2.70
17	315	7.0	17	220		---	---		2.80
18	---	7.1	17	260		---	---		2.00
19		7.2	17	250					2.80
20		7.2	17	255					2.70
21		6.7	17	260					2.65
22		(6.3)	11	295					(2.50)
23		5.0	16	295					(2.60)

Time: 60.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 13.5 seconds.
*Observations taken 12 through 31 only.

Table 14

Sotteps, Switzerland (46.6° N, 6.7° E) July 1960

Time	h'F2	foF2	Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.8	23					3.1	2.8
01	290	6.6	25					2.8	2.7
02	300	6.4	23					2.2	2.7
03	300	6.0	26						2.7
04	300	5.6	25						2.7
05	300	5.4	24	290	2.8	---	---	2.8	2.8
06	340	5.9	20	250	3.8	120	2.3	3.2	2.8
07	320	6.4	22	240	4.4	110	2.7	3.9	2.9
08	320	7.0	20	240	4.8	100	3.1	4.6	3.0
09	370	6.9	23	220	5.0	100	3.4	4.9	2.9
10	360	7.0	28	220	5.2	100	3.5	5.2	2.9
11	360	7.6	24	220	5.2	100	3.6	5.0	2.8
12	370	7.5	27	210	5.3	100	3.7	5.0	2.8
13	360	7.8	25	220	5.4	100	3.7	4.9	2.8
14	360	7.8	24	220	5.3	100	3.6	4.6	2.8
15	360	7.7	27	220	5.3	100	3.6	4.6	2.8
16	350	7.7	25	230	5.0	100	3.4	4.8	2.9
17	340	7.4	20	230	4.8	100	3.2	4.4	2.9
18	330	7.5	25	240	4.5	110	2.9	4.2	2.9
19	300	7.6	25	250	4.0	120	2.4	3.8	3.0
20	270	7.6	22	---	---	---	---	3.1	3.1
21	260	7.1	21			---	---	3.0	2.9
22	280	7.2	19					2.9	2.9
23	280	6.8	17					3.2	2.85

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 15

Ottawa, Canada (45.4° N, 75.9° W) July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	29	295					(2.85)
01		4.7	28	300					(2.85)
02		4.0	29	300					(2.75)
03		3.6	30	300					----
04		3.5	28	300					----
05	---	4.0	28	260	---	125	2.0		(2.80)
06	470	4.6	30	240	4.0	110	2.7		2.90
07	500	5.0	29	230	4.2	110	3.0	3.0	2.90
08	530	5.2	29	225	4.6	110	3.4	3.6	2.50
09	510	5.3	31	210	4.8	105	3.5	3.8	2.50
10	475	5.8	30	200	5.0	105	3.8	4.0	2.30
11	490	5.8	31	200	5.0	105	3.9	3.9	2.50
12	460	6.0	29	200	5.0	105	4.0	4.0	2.70
13	470	6.0	30	200	5.1	105	4.0		2.80
14	450	6.0	30	210	5.0	105	3.8		2.70
15	435	6.2	31	210	5.0	105	3.7		2.65
16	430	6.5	30	215	4.8	110	3.4		2.70
17	385	6.7	30	230	4.5	110	3.0		2.80
18	350	6.8	30	250	4.0	110	2.8	3.0	2.85
19	---	6.8	30	270	---	120	2.2	2.8	2.85
20		6.8	30	270		---	---	1.7	2.85
21		6.8	30	270					2.90
22		6.2	30	270					(2.80)
23		5.5	29	290					(2.90)

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 16

Rome, Italy (41.9° N, 12.5° E) July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.9)	19	310				4.0	(2.60)
01		(7.0)	17	310				3.6	(2.60)
02		(6.6)	12	300				3.4	(2.50)
03		(6.8)	18	310				3.2	(2.60)
04		(6.2)	24	300				3.2	(2.65)
05		6.1	27	300		140	1.8	3.2	(2.75)
06	---	6.6	24	250	---	120	2.3	4.0	2.70
07	(340)	(7.2)	18	240	4.4	110	2.9	5.1	2.70
08	(420)	7.4	22	240	4.8	110	3.3	5.1	2.85
09	(330)	7.6	24	230	5.1	110	3.5	5.4	2.85
10	380	8.0	25	220	5.4	110	3.7	5.6	2.70
11	390	8.3	27	230	5.4	110	3.8	5.8	2.75
12	(350)	8.6	24	220	5.4	110	3.8	5.3	2.70
13	(360)	8.6	24	220	5.5	110	3.8	5.6	2.75
14	360	8.7	21	220	5.4	110	3.7	5.6	2.75
15	350	8.7	28	230	(5.2)	110	3.6	5.0	2.80
16	(340)	8.5	25	230	5.0	110	3.4	5.4	2.80
17	---	8.4	24	250	---	110	3.2	4.8	2.90
18		(8.4)	25	250		110	2.7	4.6	(2.90)
19		8.6	25	270		130	1.9	4.1	2.90
20		(8.6)	25	260		---	---	3.8	(2.85)
21		8.4	17	270				3.8	2.80
22		(8.0)	11	280				3.6	(2.60)
23		(8.1)	13	300				3.8	(2.65)

Time: 15.0°E.
Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 17

Formosa, China (25.0° N, 121.5° E) July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>10.0	29	270				(2.8)	(2.95)
01		11.2	28	245				2.0	3.05
02		8.6	28	230				(2.0)	3.05
03		7.3	28	230				(1.8)	3.10
04		6.4	26	235				(1.9)	3.05
05		6.2	28	260				(2.0)	3.00
06	---	7.2	31	235		---	----	(3.3)	3.25
07	(240)	7.6	31	225	---	<109	----	3.6	3.20
08	(260)	7.9	30	210	---	(101)	----	4.3	3.05
09	(350)	8.0	30	(210)	(5.4)	(101)	----	4.8	2.85
10	405	0.2	30	(200)	(5.5)	(101)	----	(5.1)	2.70
11	360	>9.6	28	(205)	(5.6)	(101)	----	(5.7)	2.80
12	370	>10.5	31	(200)	(5.6)	(100)	----	4.7	2.70
13	360	11.9	31	(205)	(5.6)	(101)	----	4.6	2.80
14	350	12.2	30	210	(5.5)	(101)	----	4.5	2.80
15	335	12.6	30	(210)	(5.5)	101	----	4.4	2.85
16	305	12.8	31	215	(5.0)	(101)	(3.40)	4.1	2.90
17	290	12.8	31	230	---	<105	----	3.6	3.00
18	---	12.9	31	240				(3.7)	3.00
19		>10.7	30	245				(2.6)	2.95
20		9.8	30	270				(2.9)	2.80
21		9.5	31	290					2.70
22		>9.3	28	295				(2.6)	2.70
23		>9.5	29	290				2.0	2.70

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 18

El Cerillo, Mexico (19.3° N, 99.5° W) July 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.8	29	280					2.75
01		7.6	28	275					2.90
02		7.4	27	270				2.0	2.90
03		6.7	26	260					2.90
04		6.1	26	280					2.85
05		5.6	27	270					2.90
06		5.7	27	280				2.0	2.90
07		6.8	27	245		(114)	2.45	3.6	3.10
08		7.8	28	220		103	2.90	3.8	3.00
09	(385)	8.5	29	200	5.0	103	3.35	3.9	2.70
10	400	9.0	28	200	5.4	103	3.60	4.0	2.60
11	390	10.0	29	200	5.4	103	3.80	4.4	2.50
12	380	10.9	28	200	5.6	103	4.00	4.4	2.65
13	360	11.0	30	200	5.4	103	4.00	4.2	2.70
14	340	11.1	30	200	5.4	103	3.90	4.1	2.70
15	360	11.1	30	210	5.4	103	3.80	4.1	2.70
16	340	11.0	29	220	5.2	103	3.50	4.0	2.80
17	320	10.8	30	230	4.8	103	3.20	4.0	2.90
18	---	9.8	29	235	---	115	2.70	3.4	2.95
19		9.4	30	260				3.4	2.90
20		9.0	29	260				3.4	2.80
21		8.8	28	270				3.0	2.90
22		8.4	28	270				2.7	2.80
23		8.2	29	280					2.80

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 19

Singapore, British Malaya (1.3° N, 103.8° E) — July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.9	25	240		---		2.6	3.10
01		8.9	28	220		---		2.5	3.25
02		7.0	30	230		---		2.9	3.10
03		5.8	29	245		---		1.4	3.15
04		4.7	20	230		---	----		3.15
05		4.0	26	245		---	----		3.10
06	---	5.3	27	290	---	125	1.40		3.00
07	---	9.2	30	250	---	120	2.55		3.05
08	---	11.6	31	230	---	110	3.20	3.3	2.90
09	---	12.8	30	210	---	105	3.55	4.0	2.80
10	---	13.3	30	205	---	105	3.80		2.50
11	390	12.9	30	205	---	105	3.95		2.35
12	365	11.9	29	205	5.5	105	4.00		2.30
13	---	12.0	29	205	5.4	105	4.00		2.20
14	---	11.5	31	205	---	105	3.90		2.20
15	---	11.4	30	205	---	105	3.65		2.20
16	---	11.5	29	220	---	110	3.25		2.30
17	---	11.7	30	240	---	110	2.65	2.9	2.40
18	---	12.1	31	260	---	---		2.5	2.55
19		>12.3	28	275		---		3.0	2.70
20		12.7	29	285		---		2.2	2.75
21		12.4	22	240		---		2.4	2.95
22		11.4	27	210		---		3.0	3.00
23		10.7	26	220		---		2.4	3.05

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 20

Lwiro, Congo (2.3° S, 20.0° E) — July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(10.2)	17	220				(3.0)	(3.05)
01		9.0	16	215				(2.0)	(3.05)
02		7.8	16	225				(2.6)	2.02
03		7.5	13	230				(2.0)	2.96
04		6.0	20	230				(2.0)	2.96
05		5.3	21	230				(2.4)	3.10
06		5.8	23	255		---	E	(2.0)	3.10
07	250	9.1	26	240		121	2.40	(3.0)	3.20
08	265	11.4	26	230		111	3.10	(4.0)	3.26
09	270	11.3	26	220	---	111	3.50	(4.4)	3.19
10	200	11.6	26	215	5.0	109	3.70	(4.4)	3.00
11	305	11.4	26	205	5.1	109	3.85	(3.0)	2.92
12	325	12.1	27	200	5.2	109	3.95	(4.4)	2.75
13	340	12.3	27	200	5.0	109	3.90		2.67
14	360	>12.2	26	210	---	111	3.75	(4.4)	2.55
15	355	12.6	26	210		111	3.55	(4.1)	2.56
16	335	12.6	26	230		111	3.25	(4.2)	2.60
17	(305)	13.0	26	245		113	2.75	(4.2)	2.71
18		13.4	25	260				(3.4)	2.76
19		>13.4	26	260				(4.0)	2.91
20		>13.0	25	260				(2.9)	(2.97)
21		>12.5	22	225				(3.2)	(3.20)
22		>10.7	22	210				(2.7)	----
23		>10.0	17	210				(2.0)	(2.90)

Time: 30.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 21

Talara, Peru (4.6° S, 81.3° W) — July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		0.6	29	220					3.05
01		8.1	31	240					3.00
02		7.0	29	245					3.05
03		6.6	30	245					3.05
04		5.9	29	250					3.15
05		5.1	30	245					3.10
06		4.2	29	<270					2.05
07		5.0	30	260		133	2.15		2.95
08		7.4	31	235		115	2.90		2.05
09		8.4	31	220		113	3.35		2.55
10	---	9.0	31	210	---	109	3.60	3.7	2.30
11	---	9.3	31	210	(5.4)	109	3.00		2.20
12	(430)	9.5	31	200	5.4	109	3.95		2.20
13	(400)	9.6	31	205	5.3	109	3.90		2.18
14	(420)	>9.0	30	205	(5.3)	109	3.80	3.8	2.20
15	(390)	10.0	30	(210)	5.2	109	3.58	4.0	2.20
16	---	10.05	30	210	---	109	3.30	4.0	2.25
17	---	10.0	31	230	---	111	2.85	3.5	2.30
18		>9.5	31	270		133	2.10	2.1	(2.30)
19		(9.2)	31	320					(2.30)
20		>9.0	31	350					(2.35)
21		>9.0	30	330					2.50
22		(9.6)	27	270					(2.85)
23		9.5	29	230					3.15

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

Falkland Is. (51.7° S, 57.8° W) — July 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.8	21	355				(1.8)	(2.40)
01		2.9	25	340				(1.9)	2.50
02		2.9	24	325					2.50
03		2.9	23	315					2.50
04		2.8	24	305					2.50
05		2.0	23	300					2.70
06		2.8	22	265					2.80
07	---	3.4	17	250	---	---	E		(2.90)
08	---	5.6	18	220	---	150	1.85	2.2	----
09	---	7.4	20	215	---	135	----	2.6	(3.60)
10	---	7.8	20	220	---	125	----	(3.6)	(3.35)
11	---	8.7	19	230	---	120	----	(4.0)	3.40
12	---	9.2	22	230	---	115	----	(3.6)	3.40
13	---	8.2	18	215	---	115	----	3.2	(3.40)
14	---	8.0	16	215	---	125	----	2.7	(3.40)
15	---	7.9	19	220	---	135	----	2.4	3.65
16	---	6.8	16	210	---	100	1.85	(2.3)	----
17		4.3	13	200		---	----	1.7	----
18		3.8	18	240		---	----	1.4	(3.10)
19		3.8	18	245					(3.10)
20		3.0	20	240				(1.6)	(2.90)
21		2.6	21	320				(1.6)	2.60
22		2.6	23	340				(2.4)	2.50
23		2.8	24	350				(2.3)	(2.50)

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 23

Kiruna, Sweden (67.0° N, 20.3° E) — June 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.6	13	380	---	---	----	3.6	2.6
01	---	5.7	12	310	---	---	----	3.2	2.6
02	(340)	5.4	14	290	3.0	---	1.90	3.2	2.6
03	405	5.3	19	295	3.4	115	2.25	3.4	2.6
04	400	5.5	18	250	3.8	110	2.40		2.6
05	425	5.7	20	250	4.0	110	2.70		2.6
06	400	5.6	21	235	4.3	110	2.80		2.6
07	425	5.9	17	235	4.6	105	3.00		2.6
08	410	5.8	21	225	4.7	105	3.00		2.6
09	415	5.0	24	225	4.7	105	3.20		2.6
10	415	6.0	23	215	4.8	105	3.20		2.6
11	430	6.0	25	215	4.9	105	3.25		2.6
12	410	6.0	25	215	4.9	105	3.25		2.65
13	400	6.0	25	220	4.0	105	3.20		2.65
14	415	6.0	26	220	4.8	105	3.20		2.65
15	435	5.9	27	230	4.7	105	3.10		2.6
16	395	5.0	28	230	4.6	105	3.00		2.8
17	360	6.0	27	240	4.5	110	3.00		2.8
18	(325)	5.8	25	250	4.2	110	2.75	3.2	3.0
19	---	5.0	22	260	---	115	2.60	3.4	2.0
20	---	5.7	22	330	---	---	2.30	3.8	2.8
21	---	5.9	12	320	---	---	----	4.6	2.0
22	---	(5.8)	8	370	---	---	----	3.4	(2.8)
23	---	5.3	11	340	---			3.0	2.6

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 24

Sottens, Switzerland (46.6° N, 6.7° E) — June 1960

Time	h'F2	foF2—Count		h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.9	25						2.8
01	300	6.0	28						2.7
02	310	6.6	27						2.7
03	300	6.1	27						2.7
04	310	6.0	25						2.7
05	300	6.0	25	200	3.0	140	1.0	2.7	2.7
06	310	6.3	25	260	4.0	120	2.4	3.4	2.8
07	320	7.0	23	240	4.6	110	2.0	4.3	2.9
08	300	7.0	12	230	4.9	100	3.1	4.6	2.95
09	340	7.9	23	230	5.2	100	3.4	5.0	2.9
10	340	0.2	24	220	5.2	100	3.6	5.2	2.9
11	340	8.0	24	220	5.3	100	3.7	5.3	2.9
12	360	0.0	24	220	5.5	100	3.7	5.3	2.8
13	360	7.7	27	220	5.3	100	3.7	5.2	2.8
14	360	7.0	26	220	5.4	100	3.7	5.0	2.0
15	360	7.0	27	230	5.2	100	3.6	4.5	2.9
16	340	7.4	28	230	5.0	100	3.5	4.9	2.9
17	320	7.5	28	240	4.9	100	3.2	4.4	2.9
18	320	7.6	26	240	4.5	110	2.9	4.1	2.9
19	300	7.6	20	260	3.8	120	2.5	4.6	3.0
20	270	7.7	21			---	---	3.8	3.0
21	270	7.2	25					3.8	2.9
22	200	7.1	22						2.9
23	290	7.0	25						2.0

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 25

Wakkanai, Japan (45.4° N, 141.7° E) June 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.2	23	295				2.1	2.65
01		7.0	24	290				2.0	2.65
02		6.8	25	280				2.4	2.65
03		6.3	25	290				2.1	2.65
04		6.3	25	285			1.60	2.2	2.60
05	380	6.8	25	250	3.7		2.40	2.6	2.60
06	350	7.4	24	250	4.2		2.90	4.0	2.70
07	350	7.2	24	(250)	(4.6)		3.20	5.0	2.70
08	360	7.3	21	(240)	4.8		3.40	5.8	2.70
09	300	6.7	22	240	5.0		3.55	5.5	2.60
10	395	6.8	22	(240)	5.2		3.60	5.5	2.70
11	390	7.3	20	230	5.2		3.60	5.1	2.70
12	410	7.2	23	230	5.3		3.60	5.0	2.60
13	400	7.3	23	230	5.2		3.50	4.0	2.65
14	400	7.2	26	240	5.2		3.55	4.4	2.70
15	390	7.3	26	235	5.0		3.45	4.2	2.70
16	365	7.3	26	250	4.8		3.25	4.0	2.75
17	340	7.3	26	250	(4.5)		2.85	4.6	2.80
18	---	7.4	26	260			2.40	(4.9)	2.80
19		7.4	25	290			----	4.3	2.75
20		7.4	22	285				(3.3)	2.65
21		(7.4)	20	300				(3.1)	(2.60)
22		7.4	19	300				2.8	2.60
23		7.3	20	290				2.8	2.60

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 26

Akita, Japan (39.7° N, 140.1° E) June 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	24	300				(2.5)	2.70
01		7.4	24	295				(3.0)	2.70
02		7.0	25	280				(3.2)	2.80
03		6.7	26	295				(2.6)	2.70
04		6.5	28	295				(2.4)	2.70
05	(355)	7.0	29	255	---		2.15	2.7	2.70
06	310	8.0	30	250	4.3		2.80	3.7	2.75
07	320	8.0	30	250	4.7		3.20	5.0	2.80
08	340	7.7	29	(245)	(5.0)		3.50	(6.0)	2.85
09	370	7.9	26	240	(5.1)		3.70	(6.1)	2.75
10	370	7.8	25	(220)	5.4		3.00	(5.0)	2.70
11	385	0.1	26	220	5.5		3.90	5.7	2.70
12	395	7.9	29	240	5.4		3.95	(5.8)	2.75
13	395	8.4	28	220	5.2		3.90	(5.2)	2.70
14	360	8.4	28	240	5.2		(3.00)	(5.4)	2.75
15	350	8.3	29	240	5.0		3.50	(5.2)	2.80
16	345	8.4	30	245	4.8		3.30	4.6	2.85
17	325	0.2	28	245	4.5		2.95	(5.0)	2.90
18	300	8.1	28	260	---		2.30	(5.0)	2.90
19		8.2	29	275				(4.9)	2.80
20		8.0	29	295				(4.2)	2.70
21		7.9	27	300				(4.9)	2.65
22		8.0	26	305				(5.4)	2.65
23		7.8	25	295				(4.0)	2.70

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 27

Tokyo, Japan (35.7° N, 139.5° E) June 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.2	30	330				(4.9)	2.60
01		8.0	30	300				(3.4)	2.65
02		7.4	30	290				(2.6)	2.70
03		7.0	30	300				(2.6)	2.65
04		6.6	30	300				(2.6)	2.60
05	---	7.0	30	270			2.15	2.2	2.70
06	330	8.2	30	255	4.3		2.70	3.4	2.75
07	320	8.3	29	255	4.9		3.20	(5.1)	2.80
08	<345	8.1	28	(255)	5.4		3.50	>5.5	2.75
09	<375	8.2	27	(250)	5.5		3.70	(6.2)	2.60
10	<375	8.5	27	245	5.5		3.80	(6.2)	2.65
11	380	8.4	30	250	5.6		(3.90)	6.1	2.65
12	390	8.8	30	250	5.6		(3.90)	(6.2)	2.65
13	390	9.1	30	250	5.3		(3.90)	5.8	2.60
14	380	9.5	30	250	5.3		(3.00)	5.0	2.65
15	355	9.6	30	250	5.3		3.60	5.8	2.70
16	345	9.4	30	250	4.9		3.40	4.4	2.70
17	320	9.2	29	255	(4.5)		2.00	(4.7)	2.75
18	(305)	9.2	29	270			2.25	(5.0)	2.80
19	---	8.6	29	280				(4.2)	2.75
20		8.0	30	300				(4.1)	2.60
21		8.0	30	(335)				(5.1)	2.50
22		8.1	29	(345)				(5.0)	2.55
23		8.1	29	<350				(5.4)	2.60

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 28

Yamagawa, Japan (31.2° N, 130.6° E) June 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		0.4	14	325				5.2	2.70
01		8.8	16	300				3.8	2.80
02		0.3	20	290				(3.9)	2.80
03		7.0	20	295				(3.0)	2.80
04		6.3	21	305				3.2	2.70
05		6.5	20	300				2.4	2.80
06		7.4	27	255			2.30	2.7	2.85
07		8.2	29	250			3.00	3.9	3.00
08	---	0.2	20	260	---		3.30	5.2	2.90
09	(340)	0.3	27	255	5.1		3.55	6.2	2.70
10	380	8.5	29	245	5.6		3.70	7.1	2.60
11	390	0.0	30	240	5.6		3.85	6.4	2.60
12	395	9.4	30	250	5.5		3.90	6.4	2.60
13	400	10.0	30	250	5.6		4.00	6.2	2.60
14	375	10.4	30	250	5.5		(3.90)	6.0	2.65
15	360	10.4	30	250	5.4		3.80	5.2	2.70
16	340	10.2	30	250	5.3		3.50	5.4	2.75
17	330	10.6	30	255	5.0		3.20	4.4	2.80
18	(290)	10.0	30	(270)	---		2.60	5.0	2.05
19		(9.4)	29	200			----	(5.0)	2.80
20		0.7	29	290				(4.2)	2.60
21		3.4	28	330				(4.4)	2.55
22		(0.5)	24	340				(3.0)	2.55
23		(0.2)	20	330				(4.3)	2.60

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 29

Graz, Austria (47.1° N, 15.5° E) April 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.6	25	(325)					(2.6)
01		>5.7	26	(335)					2.6
02		(5.5)	27	(335)					(2.6)
03		5.4	24	(330)					(2.6)
04		>4.8	26	<375					(2.6)
05		(4.9)	23	<330					(2.8)
06		5.4	24	<260					3.0
07	(330)	>5.9	26	(240)					3.0
08	<360	(7.2)	25	250					(3.0)
09	345	8.0	26	240	(4.0)				2.9
10	300	8.0	25	<250	4.9				2.9
11	295	>9.3	20	<240	5.1				2.9
12	310	9.5	29	<240	5.2				2.9
13	300	9.6	20	<250	5.1				3.0
14	290	9.5	29	<250	(5.0)				2.9
15		>9.4	29	(245)					2.9
16		>9.3	29	250					2.9
17		9.2	28	250					3.0
18		>9.0	29	250					3.0
19		>0.9	28	250					(3.0)
20		(7.9)	27	250					3.0
21		>6.6	27	280					2.0
22		>6.2	24	300					(2.7)
23		>5.6	25	<350					(2.6)

Time: 15.0°E.
Sweep: 2.0 Mc to 10.0 Mc in 50 seconds.

Table 30

Kiruna, Sweden (67.8° N, 20.3° E) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	8	350				4.0	(2.65)
01		(4.9)	6	350				3.5	----
02		(5.0)	5	345				3.2	----
03		4.9	16	335				3.4	2.6
04		5.0	20	325					2.7
05		4.6	13	290					2.7
06		4.0	19	200					2.0
07		3.6	21	265					2.0
08		4.2	27	260		---	---		2.0
09		5.9	30	250		---	<1.6		2.9
10		7.4	30	245		---	<1.6		3.0
11		9.0	31	240		---	<2.0		3.1
12		10.0	30	230		---	2.0		3.15
13		9.6	30	235		---	<1.0		3.15
14		8.9	28	230		---	<1.5		3.15
15		7.6	20	230		---	(1.4)		3.15
16		6.0	21	230					3.0
17		4.2	20	250					3.0
18		3.5	14	<285				2.2	2.9
19		3.9	16	<300				2.8	2.8
20		3.0	10	205				3.0	2.8
21		3.4	10	300				3.4	2.0
22		4.7	11	330				3.1	(2.6)
23		3.6	11	340				4.0	2.6

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 31

Svalbard, Norway (78.2° N, 15.7° E) — July 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.9	11	250	----	---	2.45	3.1	(2.40)
01	---	(5.1)	9	250	3.75	105	2.40	2.7	(2.55)
02	(515)	(5.4)	12	250	3.75	100	2.60	2.9	(2.45)
03	(480)	(4.9)	9	250	3.80	110	2.50	3.4	(2.55)
04	(425)	5.2	12	240	3.90	110	2.75	2.9	(2.55)
05	510	5.5	13	240	4.00	110	2.85	3.2	2.50
06	585	4.9	15	250	4.25	100	2.90	3.2	2.30
07	570	5.2	13	260	4.25	100	3.20		2.30
08	480	5.9	13	250	4.45	110	----	3.3	2.40
09	490	6.2	17	240	4.65	100	3.25		2.35
10	(430)	6.3	12	240	4.55	100	3.30		2.55
11	(440)	(6.4)	8	230	4.90	110	3.20		(2.55)
12	(450)	6.3	11	220	4.90	110	3.20		(2.55)
13	(465)	6.0	10	220	4.85	110	3.20		(2.50)
14	(490)	(6.2)	6	215	4.65	100	3.20		(2.55)
15	---	6.4	10	220	----	105	3.15		(2.55)
16	---	6.2	12	240	----	110	3.10		2.55
17	---	6.0	13	240	----	110	3.00	4.1	(2.70)
18	---	6.0	13	245	----	110	2.90	4.2	2.60
19	---	6.1	15	250	----	---	2.85	5.2	2.55
20	---	6.2	12	250	----	---	2.65	6.5	(2.70)
21	---	6.0	10	250	----	---	----	4.0	(2.55)
22	---	5.3	10	250	----	110	2.45	4.0	(2.50)
23	---	5.0	10	250	----	---	2.35	3.4	(2.70)

Time: 15.0°E.
Sweep: 0.68 Mc to 24.6 Mc in 5 minutes, automatic operation.

Table 32

Buenos Aires, Argentina (34.5° S, 58.5° W) — July 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	29	280					2.80
01		6.0	28	285					2.65
02		5.3	29	285					2.60
03		5.3	29	265					2.90
04		4.9	29	245					2.85
05		3.7	29	260					2.60
06		3.8	26	290					2.70
07		6.2	28	260					3.00
08		9.8	28	230					3.20
09	---	10.2	27	230					3.20
10	---	>11.0	28	240		---	---		3.20
11	(240)	11.0	28	230		---	---		3.20
12	(285)	11.2	29	235		---	---		3.00
13	(285)	11.5	29	235		---	---		2.90
14	280	12.1	29	240	---				3.00
15	(270)	>12.0	30	235					3.10
16	---	11.2	31	235					3.10
17		10.9	30	220					3.15
18		>9.7	30	220					3.10
19		9.2	30	230					3.10
20		9.8	31	225					3.00
21		9.0	31	230					3.00
22		7.4	30	250					3.00
23		6.4	30	280					2.80

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 33

Trelew, Argentina (43.2° S, 65.3° W) — July 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.2	16	340					2.50
01		4.1	16	335					2.50
02		4.2	17	310					2.60
03		4.3	15	305					2.60
04		4.3	14	305					2.55
05		4.4	14	275					2.70
06		>4.0	11	(230)					2.60
07		3.9	11	280					2.65
08		7.1	12	225		150	2.50		(3.30)
09		>9.5	11	210		99	3.20	3.7	(3.50)
10		>9.8	12	210		99	----	3.8	(3.45)
11		>10.0	11	220		97	----	4.1	----
12	---	>10.1	6	(215)		97	----	(4.4)	----
13	---	(9.8)	7	(215)		97	----	(4.0)	(3.30)
14	---	>9.8	9	(210)		97	----		(3.40)
15		9.2	12	210		97	----	3.9	(3.45)
16		9.0	16	210		101	3.00	3.2	3.35
17		(8.2)	15	205		---	2.20	2.9	(3.35)
18		>6.1	14	200				2.8	(3.20)
19		(6.8)	14	215					(3.30)
20		6.5	15	210				3.0	3.00
21		5.6	16	210					3.10
22		4.8	16	220				2.1	2.80
23		4.4	16	310				2.4	2.50

Time: 60.0°W.
Sweep: 1.3 Mc to 18.0 Mc in 15 seconds.

Table 34

Byrd Station (80.0° S, 120.0° W) — July 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.1	12	355				3.1	----
01		(4.95)	12	(335)		---	---	3.5	----
02		(4.7)	12	<355				>3.0	(2.50)
03		(4.75)	8	<365				4.2	(2.60)
04		(4.6)	8	(340)				>3.8	----
05		(3.75)	8	<330				3.8	(2.75)
06		(4.5)	5	<300					----
07		(2.8)	4	<300					----
08		(2.5)	3	---					
09		(3.0)	7	<290					(3.00)
10		(4.5)	12	(285)					(2.82)
11		(4.4)	15	285					(2.90)
12		(3.95)	12	(335)					(2.80)
13		>3.0	7	<335				3.0	(2.80)
14		(3.65)	8	(300)				>3.0	----
15		(3.45)	8	350				4.0	(2.65)
16		(3.35)	10	(360)				3.1	----
17		(4.0)	9	400		---	---	4.0	----
18		>4.3	6	<335				4.6	----
19		(4.8)	11	390				3.0	----
20		>4.9	13	340		---	---	3.6	----
21		>5.2	9	360				4.3	----
22		>5.1	11	325				3.2	----
23		(5.0)	13	325				3.0	----

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 35

Juliusruh/Rügen, Germany (54.6° N, 13.4° E) — June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.5	29	<305					2.45
01		7.5	28	300			E	1.0	2.45
02		6.9	29	305			----	1.2	2.45
03		6.8	29	315			1.20	1.4	2.50
04	---	6.8	28	300	---		1.60	2.0	2.55
05	(390)	7.3	29	275	3.9		2.45	2.8	2.55
06	375	7.7	27	(260)	4.5		2.90	3.8	2.60
07	410	7.9	26	250	5.0		3.25	3.8	2.60
08	400	7.9	27	(250)	5.3		3.50	4.3	2.55
09	400	8.1	27	(250)	5.4		3.70	(4.0)	2.60
10	420	8.1	25	230	5.6		3.75	4.5	2.55
11	430	8.0	25	(225)	5.6		(3.80)	4.4	2.50
12	430	8.0	27	225	5.7		(3.90)	4.7	2.50
13	470	7.6	29	220	5.6		(3.95)	4.3	2.50
14	445	7.6	29	240	5.6		3.90	4.2	2.55
15	430	7.6	29	230	5.4		3.75	4.2	2.60
16	425	7.5	28	235	5.3		3.50	4.2	2.55
17	(405)	7.6	26	255	5.1		3.30	3.6	2.65
18	---	7.4	27	(270)	---		2.95	4.0	2.70
19	---	7.0	28	(280)			2.55	(3.7)	2.70
20		7.7	28	<300			1.90	(3.7)	2.70
21		7.9	28	295				(2.7)	2.70
22		7.9	28	290					2.55
23		7.8	28	300					2.45

Time: 15.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 36

Lindau/Harz, Germany (51.6° N, 10.1° E) — June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.84	30	306					2.48
01		7.63	30	297				2.4	2.48
02		7.17	30	308					2.47
03		6.95	30	309		---	E	2.3	2.48
04		6.72	30	306		---	----	2.7	2.52
05	---	7.30	30	272	----	109	2.20	3.3	2.56
06	(378)	7.72	30	250	4.42	107	2.73	4.2	2.60
07	418	7.93	30	243	4.81	103	3.12	5.0	2.60
08	380	8.38	30	243	5.15	100	3.40	5.2	2.60
09	402	8.44	30	227	5.30	100	3.60	5.2	2.57
10	408	8.50	28	224	5.55	100	3.77	5.3	2.58
11	430	8.37	28	228	5.65	100	3.85	5.2	2.58
12	464	8.00	29	218	5.70	100	3.82	5.2	2.48
13	447	7.95	29	227	5.70	100	3.90	5.2	2.52
14	435	7.92	28	222	5.72	100	3.87	5.0	2.54
15	429	7.84	29	231	5.55	100	3.79	4.8	2.59
16	424	7.70	29	233	5.45	101	3.60	4.5	2.58
17	424	7.80	30	240	5.18	102	3.35	4.3	2.63
18	(380)	7.76	28	250	(4.70)	103	3.02	4.7	2.69
19		7.90	29	261		106	2.62	5.0	2.74
20		7.96	30	276		---	----	4.2	2.73
21		8.08	30	278		---	E	3.8	2.63
22		8.20	30	281				3.4	2.58
23		8.03	29	296				3.0	2.50

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 37

Dourbes, Belgium (50.1° N, 4.6° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	25	295				1.3	2.55
01		7.2	25	295				1.2	2.60
02		7.0	24	295				1.3	2.60
03		6.8	24	300		---	----	1.2	2.60
04	---	6.9	24	280		123	----	2.2	2.70
05	(340)	7.5	24	250	---	111	2.45	3.0	2.75
06	(375)	7.0	23	240	---	107	2.95	3.6	2.80
07	(375)	8.2	22	<245	4.7	105	3.30	4.0	2.00
08	380	8.4	22	(230)	5.2	105	3.50	4.2	2.70
09	370	8.4	21	<225	5.4	105	3.65	4.0	2.75
10	395	8.2	21	(220)	5.5	105	3.80	4.5	2.65
11	400	7.9	24	<230	5.8	105	3.80	4.4	2.70
12	400	7.9	23	(220)	5.6	105	3.90	4.4	2.65
13	410	7.8	23	(230)	5.4	105	(3.90)	4.4	2.65
14	410	7.7	21	<240	5.5	105	3.80	4.5	2.65
15	410	7.7	22	(235)	5.4	107	3.60	4.3	2.70
16	410	7.6	21	(235)	5.2	107	3.40	4.0	2.75
17	(385)	7.8	22	<250	4.9	107	3.05	4.0	2.80
18		7.8	23	(260)		(110)	2.65	3.9	2.85
19		(7.8)	21	280		<125	----	3.5	(2.85)
20		8.0	22	270		---	----	3.0	2.75
21		(8.2)	19	(280)				(3.0)	(2.70)
22		(8.3)	19	200				(2.1)	(2.65)
23		7.9	22	300				2.2	2.60

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 38

St. John's, Newfoundland (47.6° N, 52.7° W) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	25	300				2.6	2.55
01		6.1	23	310				2.6	2.50
02		5.6	20	310				<1.0	2.55
03		5.3	21	310				<1.7	2.60
04		5.0	27	265		<124	2.00		2.00
05	---	5.8	28	270	---	120	2.65	2.8	2.00
06	440	6.0	29	<250	4.5	111	3.10	3.4	2.75
07	455	6.0	27	240	4.9	109	3.35	3.6	2.70
08	480	6.0	27	230	5.1	109	3.70	3.9	2.70
09	455	6.6	28	<240	5.4	107	3.90	4.0	2.60
10	400	6.5	27	(230)	5.5	105	4.00	4.2	2.55
11	480	6.0	29	220	5.6	109	4.00	4.2	2.60
12	480	6.9	27	<225	5.6	107	----	4.2	2.50
13	400	7.0	26	235	5.7	100	4.00	4.0	2.55
14	450	7.2	29	225	5.5	105	3.90		2.50
15	435	7.2	30	230	5.3	109	(3.70)		2.55
16	410	7.2	30	240	5.2	109	3.50		2.55
17	390	7.5	29	250	4.8	111	3.15	3.4	2.60
18	---	7.8	29	(270)	---	117	2.70	3.8	2.65
19	---	7.8	28	290		<137	2.00	3.6	2.65
20		8.0	20	280		---	----	3.4	2.60
21		0.0	22	<295				2.4	2.55
22		7.7	22	300				<1.7	2.55
23		7.2	22	300				2.4	2.60

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 39

Budapest, Hungary (47.4° N, 19.2° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.2	29	330				3.2	
01		7.1	29	315				3.0	
02		7.0	29	315				3.2	
03		7.2	28	300		---	---	3.4	
04	(360)	7.6	30	265	4.0	135	2.5	3.6	
05	390	0.3	30	250	4.8	120	2.9	3.9	
06	380	0.6	20	255	5.2	120	3.3	4.7	
07	410	0.6	29	240	5.4	115	3.6	4.6	
08	395	0.9	30	240	5.6	110	3.7	4.6	
09	410	9.0	20	<240	5.8	110	3.0	5.8	
10	420	9.0	29	225	5.8	110	3.7	5.3	
11	430	8.6	28	230	5.8	110	3.8	4.1	
12	425	8.6	28	<240	5.8	110	3.7	4.1	
13	425	0.2	29	245	5.7	110	3.7	4.2	
14	410	8.2	29	250	5.5	115	3.7	4.6	
15	300	8.0	30	<250	5.3	120	3.4	4.0	
16	390	7.8	29	255	5.0	120	3.1	4.6	
17	(355)	7.7	27	270	4.6	130	2.7	4.3	
18		>6.9	26	290	---			3.8	
19		>6.5	23	205				4.2	
20		(6.2)	19	300				4.0	
21		>6.0	21	310				3.5	
22		>6.0	28	320				3.2	
23		>6.2	28	330				3.2	

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 40

Dakar, French W. Africa (14.8° N, 17.4° W) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.7)	3	400				3.1	----
01		(5.7)	6	360				3.1	(2.65)
02		(5.5)	6	300				3.1	(2.75)
03		(5.3)	7	320				3.7	(2.00)
04		5.0	11	310		---	-----	2.9	(2.60)
05		5.8	10	300		---	-----	3.7	(2.65)
06		5.8	12	270		---	-----	3.1	2.85
07		7.2	22	260		130	1.95	4.3	3.05
08		8.0	26	240		110	2.85	5.8	3.10
09		9.6	25	230		110	3.40	5.5	2.90
10		10.5	23	220		110	3.80	6.5	2.65
11		11.5	24	210		100	4.00	5.0	2.60
12		12.5	24	205	---	100	4.15	4.6	2.50
13		13.0	24	200	---	100	4.20	4.6	2.50
14		13.4	23	205	---	100	4.20	4.2	2.50
15	---	13.8	24	210	---	100	4.10	4.3	2.50
16		14.0	27	220	---	100	3.00	4.3	2.50
17		13.6	27	230	---	100	3.50	3.9	2.50
18		13.0	28	240		110	3.00	3.3	2.55
19		12.7	26	260		120	2.35	3.0	2.55
20		(11.6)	7	315		---	-----	2.9	----
21		(0.4)	6	420				2.6	(2.35)
22		7.8	14	435				2.5	2.30
23		---	4	420				2.8	----

Time: 0.0°.
Sweep: 1.2 Mc to 17.0 Mc.

Table 41

Djibouti, French Somaliland (11.6° N, 43.2° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.2)	1	---				2.1	----
01		(7.1)	1	---				2.3	----
02		---	0	---				2.2	
03		---	0	---				2.0	
04		(7.9)	2	250				2.0	----
05		(6.2)	9	240		---	----	2.0	3.10
06		7.5	20	275		135	1.70	2.0	2.90
07		9.4	26	250		110	2.80	4.0	2.85
08		10.6	27	240		110	3.30	4.2	2.65
09		11.0	29	235		110	3.70	6.6	2.45
10		11.2	25	230		110	4.00	6.7	2.30
11		11.4	22	235		---	4.20	6.7	2.25
12		11.4	19	230	---	---	4.20	6.7	2.20
13	---	11.3	14	230	---	110	4.20	6.9	2.20
14	---	11.4	21	230	---	110	4.10	7.0	2.20
15	---	(11.1)	6	230	---	110	3.90	6.6	(2.15)
16	---	(11.6)	9	245	---	110	3.60	6.5	(2.25)
17		(11.2)	3	250		110	(3.10)	4.4	----
18		(11.8)	2	280		120	(2.20)	4.0	----
19		(8.6)	2	340		---	E	1.9	----
20		(8.3)	2	---				1.5	
21		(7.7)	5	---					(2.10)
22		(6.6)	2	---		---	----		----
23		---	0	---				1.9	

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 42

Tahiti, Society Is. (17.7° S, 149.3° W) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.8	14	225		---	----	1.8	3.20
01		6.8	16	225		---	----	1.7	3.00
02		6.8	19	235		---	----	1.8	3.05
03		5.0	17	225		---	----	1.5	3.25
04		4.9	10	250		---	E	1.0	2.90
05		>4.5	20	270		---	E	1.8	2.90
06		5.2	10	295		---	E	1.8	2.00
07		9.8	20	255		125	2.25	2.6	3.10
08		13.0	16	245		110	3.00		3.15
09		14.0	14	230		110	3.50		3.10
10	---	14.3	17	225		110	3.75		3.00
11	---	14.3	14	220		105	3.90		2.90
12	---	13.8	20	220		105	4.00	4.1	2.00
13	---	14.4	17	225		105	3.85	4.0	2.75
14	---	14.0	18	230		110	3.70		2.65
15	---	13.8	16	245		110	3.50		2.65
16		14.2	17	250		115	3.00	3.4	2.65
17		15.0	14	260		---	2.20	3.1	(2.70)
18		D	13	250		---	E	3.1	(2.95)
19		D	8	240		---	----	2.8	----
20		(15.5)	5	240		---	----	2.7	----
21		14.9	12	240		---	----	2.6	(2.90)
22		(13.8)	10	225		---	----	2.2	(3.00)
23		11.6	12	230		---	----	2.0	(3.10)

Time: 150.0°W.
Sweep: 1.2 Mc to 17.0 Mc.

Table 43

Tananarive, Madagascar (18.8° S, 47.5° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	20	260		---	E	2.4	2.85
01		2.9	28	275		---	E	2.2	2.70
02		2.9	29	275		---	E	2.4	2.70
03		2.0	28	<280		---	E	2.4	2.70
04		2.6	30	260		---	E	2.2	2.70
05		2.6	30	280		---	E	2.2	2.80
06		4.1	29	270		---	E	2.5	2.75
07		8.2	28	240		120	2.20	2.9	3.30
08		10.6	30	235		110	3.00		3.20
09	---	11.6	30	230		110	3.40	3.7	3.10
10	---	11.4	30	230		110	3.70	4.1	3.05
11	---	11.0	29	230		110	3.85	4.2	2.95
12	(330)	10.5	29	240	---	110	3.90	4.3	2.90
13	---	10.2	28	240	---	110	3.95	4.5	2.75
14	---	10.0	29	240	---	110	3.70	4.2	2.75
15	---	9.8	28	240	---	115	3.40	4.0	2.70
16		>9.5	30	245		120	2.90	3.7	2.80
17		(9.6)	30	245		135	1.90	3.3	2.90
18		8.3	29	220		---	----	2.9	3.00
19		6.4	30	230		---	----	3.0	3.00
20		5.6	30	250		---	----	2.8	3.00
21		5.0	30	250				2.8	3.10
22		4.6	30	240				3.1	3.15
23		3.7	29	240		---	----	2.6	3.05

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 44

Sao Paulo, Brazil (23.5° S, 46.5° W) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.6	21	225					2.95
01		7.8	22	230					3.00
02		6.9	23	235					3.10
03		6.2	26	240					3.00
04		5.0	26	230					3.00
05		4.4	22	265					2.00
06		4.2	24	265			----		2.90
07		7.1	23	255			----		3.10
08		9.9	22	245			(2.00)		3.20
09		11.5	23	235			3.25		3.10
10		12.6	25	225			(3.55)		3.10
11	---	12.6	26	<215			(3.00)		3.00
12	---	12.7	22	205			----		2.80
13	(315)	13.2	22	225			----		2.70
14	(340)	14.0	21	225	---		(3.70)		2.70
15	(340)	14.2	24	240			(3.35)		(2.80)
16	---	14.2	26	245			3.10		(2.90)
17		(14.0)	27	240			----		(3.10)
18		(13.5)	27	220					(3.20)
19		(12.0)	27	210					(3.20)
20		11.5	25	225					3.00
21		11.0	24	230					3.00
22		10.7	24	225					3.05
23		9.0	25	220					3.10

Time: 45.0°W.
Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 45

Johannesburg, Union of S. Africa (26.1° S, 28.1° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.8	29	---				<1.6	2.65
01		2.9	30	---				<1.5	2.65
02		3.0	30	---				<1.3	2.80
03		3.0	30	---				<1.5	2.90
04		2.8	30	---				<1.2	2.80
05		2.7	30	---				<1.1	2.75
06		2.8	30	---				<1.4	2.85
07		6.2	30	240			2.0		3.10
08		9.1	30	230			2.8		3.30
09	240	10.6	30	225	---		3.2		3.20
10	(250)	11.4	30	220	---		3.6		3.05
11	245	11.4	30	220	---		3.8		3.00
12	(250)	11.0	30	220	---		3.9	4.0	2.85
13	(250)	11.0	30	220	---		3.8	4.1	2.85
14	(245)	10.7	29	225	---		3.7	4.2	2.80
15	---	10.8	29	230			3.4	3.7	2.80
16		10.8	30	240			3.0	3.2	2.85
17		10.6	30	235			2.2	2.4	3.00
18		8.8	30	215				2.0	3.10
19		6.4	30	220				2.2	3.05
20		5.6	30	230				2.0	3.15
21		4.2	30	(230)				<2.0	3.15
22		3.5	29	---				1.8	3.10
23		2.9	29	---				<1.8	2.80

Time: 30.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 46

Capetown, Union of S. Africa (34.1° S, 18.3° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.5	29	---				2.4	2.60
01		2.7	30	---				<1.6	2.60
02		2.8	30	---				<1.6	2.70
03		2.8	30	---				1.6	2.75
04		2.8	30	---				<1.6	2.75
05		2.0	30	---				1.6	2.90
06		2.6	30	---				1.5	2.80
07		2.8	28	---				<1.4	2.80
08		6.3	30	240			2.1	2.2	3.05
09	---	8.9	27	235			2.7	2.0	3.20
10	245	10.3	28	235			3.1		3.15
11	(240)	11.0	29	230			3.4	3.6	3.05
12	250	11.4	28	230			3.6	3.7	2.90
13	---	11.6	28	230			3.6	3.9	2.90
14	---	11.3	29	230			3.5	4.0	2.80
15	---	11.4	30	235			3.3	4.0	2.80
16	(255)	11.6	29	240			3.0	3.6	2.85
17		10.9	20	235			2.4	2.6	3.00
18		9.3	27	220			<1.8	2.6	3.00
19		6.8	30	215				2.0	3.00
20		5.4	30	225				1.8	3.15
21		3.9	29	(235)				<1.4	3.20
22		2.7	28	---				2.7	3.15
23		2.4	28	---				2.4	2.80

Time: 30.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 47

Buenos Aires, Argentina (34.5° S, 58.5° W) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	28	290					2.70
01		5.7	29	270					2.75
02		5.4	29	285					2.70
03		5.0	29	285					2.70
04		5.0	29	260					2.90
05		4.1	29	225		---	---		2.80
06		3.9	27	285					2.75
07		6.3	28	260					3.00
08		10.2	27	225		---	---		3.30
09		11.0	29	220		---	---		3.25
10	(240)	11.2	26	220		---	---		3.20
11	(240)	11.0	26	220		109	---		3.10
12	(255)	11.0	28	220		---	---		3.00
13	(265)	12.0	25	230	---	---	---		2.95
14	270	12.2	28	240	---	---	---		3.00
15		11.7	27	240					3.10
16		11.2	28	220					3.15
17		10.4	28	210					3.20
18		9.0	28	210					3.10
19		9.0	28	220					3.00
20		9.0	28	225					3.05
21		8.3	28	225					3.05
22		7.2	28	240					2.90
23		6.0	28	260					2.80

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 48

Canberra, Australia (35.3° S, 149.0° E) June 1959

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	20	250					2.85
01		4.5	26	250					2.80
02		>4.5	27	260					2.80
03		4.6	27	250					2.85
04		>5.0	26	240					2.90
05		4.5	25	200					3.00
06		4.0	26	205					3.00
07		>5.5	26	210			<1.60		(3.10)
08		>9.0	27	200			2.55		(3.30)
09		>10.0	27	200			3.00		----
10		(11.0)	19	200			3.30	3.6	(3.30)
11		>11.0	22	200			3.50	3.8	(3.10)
12		>11.0	23	200			3.60	4.0	3.15
13		>11.0	19	200			3.50	4.2	----
14		>11.0	21	200			3.35	4.2	----
15		(11.0)	24	200			3.05	3.8	(3.10)
16		>10.4	24	200			2.60	2.8	(3.10)
17		>9.0	28	200			1.80	2.2	----
18		9.0	28	200				2.0	3.00
19		7.7	25	200					3.00
20		(6.5)	24	200					3.10
21		>5.4	28	210					2.80
22		5.5	27	230					2.85
23		5.0	28	230					2.85

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 49

Trelew, Argentina (43.2° S, 65.3° W) June 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	15	320					2.50
01		4.7	15	310					2.50
02		4.6	14	305					2.55
03		4.4	17	310					2.50
04		4.5	14	290		---	---		2.60
05		4.4	13	240		---	----		2.80
06		3.7	15	255		---	----		2.75
07		3.8	12	290		---	----		2.70
08		7.4	17	205		143	2.25		3.25
09		9.0	13	200		98	3.00	3.5	(3.50)
10		>9.3	14	200		97	3.40	3.9	----
11		>9.6	14	210		96	3.55	4.0	----
12	---	(9.4)	17	210		95	----	4.4	(3.35)
13	---	9.9	12	210		95	----	4.0	(3.25)
14		>9.2	10	220		96	3.55	4.1	----
15		>9.1	15	210		97	3.20	3.4	(3.40)
16		8.7	13	205		101	2.85	3.2	(3.40)
17		>7.2	8	(200)		---	2.00	(3.2)	(3.35)
18		>6.1	8	(200)					(3.15)
19		5.8	9	(215)				(2.1)	(3.10)
20		5.8	11	215					(3.20)
21		5.3	11	220					3.00
22		5.0	11	250					2.75
23		5.1	11	(300)					2.60

Time: 60.0°W.
Sweep: 1.3 Mc to 18.0 Mc in 15 seconds.

Table 50

Freiburg, Germany (48.1° N, 7.6° E) March 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.9	28	295					2.49
01		6.7	31	285					2.54
02		6.4	31	280					2.49
03		6.2	31	290					2.50
04		5.5	31	300					2.48
05		5.3	31	200		---	----		2.56
06		6.9	31	260		123	1.75		2.84
07		9.0	31	240		113	2.70		2.97
08		10.3	31	235		111	3.10		2.93
09	---	11.2	31	230	---	111	3.35	3.4	2.87
10	---	12.4	30	225	---	109	3.50	3.5	2.02
11	---	13.0	31	230	---	109	3.60	3.6	2.79
12	---	>12.9	30	230	---	109	3.70	3.7	2.74
13	---	12.6	31	230	---	109	3.55		2.71
14	---	12.4	30	230		109	3.45		2.72
15	---	12.3	31	235		111	3.15		2.73
16		11.9	31	240		113	2.80		2.78
17		11.4	31	245		120	2.25	2.3	2.79
18		10.9	31	235		---	----	1.7	2.81
19		9.4	31	240					2.77
20		8.4	30	240					2.68
21		7.8	31	260					2.61
22		7.5	31	270					2.57
23		7.3	31	280					2.53

Time: 0.0°.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 51

Dourbes, Belgium (50.1° N, 4.6° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.9	29	290				<1.3	2.45
01		3.9	29	295					2.45
02		3.5	29	295					2.40
03		3.4	29	275					2.50
04		3.4	29	270				<1.3	2.50
05		3.3	29	255				<1.6	2.50
06		3.4	29	260				<1.6	2.70
07		4.7	29	220				<1.6	2.70
08		(8.2)	29	220		131	(2.00)		(3.00)
09		12.0	27	220		<122	2.50		3.00
10		12.8	27	215		115	2.80		3.00
11		13.1	28	215		115	2.90	3.3	2.90
12	---	13.0	26	220		115	(2.95)	3.0	2.90
13		12.8	24	220		115	(2.80)	2.8	2.85
14		13.0	28	220		<119	(2.60)		2.90
15		12.2	29	220		<130	<2.30		2.90
16		11.0	29	215				1.9	2.90
17		9.2	28	210				1.9	2.85
18		(7.0)	28	215				<1.6	(2.90)
19		5.7	29	220				<1.6	2.90
20		(4.7)	29	235				<1.6	(2.65)
21		(4.3)	27	265				<1.6	(2.60)
22		4.2	28	280				<1.6	2.50
23		4.0	28	300				<1.6	2.45

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 52

Lindau/Harz, Germany (51.6° N, 10.1° E) September 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.84	28	293					2.49
01		6.62	28	300					2.48
02		6.30	29	298				2.6	2.47
03		6.00	29	294				2.5	2.44
04		5.57	29	295				2.4	2.48
05		5.25	30	270		---	E		2.60
06	---	6.33	30	269	----	---	E	2.9	2.80
07	---	7.55	30	243	----	110	2.54	3.3	2.89
08	---	8.26	30	234	----	103	2.98	3.9	2.86
09	---	9.58	30	230	----	103	3.26	4.2	2.81
10	---	9.65	30	229	----	103	3.46	4.4	2.75
11	---	10.81	30	226	----	103	3.62	4.6	2.64
12	440	10.94	29	229	6.00	103	3.66	4.8	2.60
13	---	10.78	29	230	----	103	3.68	4.4	2.59
14	---	10.65	30	226	----	101	3.70	4.5	2.60
15	---	10.41	29	232	----	104	3.50	4.0	2.65
16	---	10.38	29	240	----	104	3.32	3.7	2.67
17		10.50	29	244		104	2.80	3.9	2.72
18		10.50	29	256		110	----	3.5	2.76
19		10.08	28	252		---	E	3.5	2.76
20		9.20	29	250				3.2	2.72
21		7.95	29	247				3.1	2.63
22	---	7.70	29	264	----			3.2	2.53
23		7.20	29	292				2.6	2.48

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 53

Juliusruh/Rügen, Germany (54.6° N, 13.4° E) August 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	30	<310			----		2.45
01		6.6	30	(310)			E	1.9	2.45
02		6.1	31	(320)			E	1.3	2.40
03		5.7	31	320			E	1.3	2.40
04		5.4	28	320			1.40	1.4	2.50
05	---	5.9	30	300	---		1.80	2.2	2.65
06	---	6.6	29	(275)	---		2.60	3.0	2.70
07	(460)	6.9	27	255	5.2		3.05	3.8	2.70
08	(510)	7.4	26	(250)	5.3		3.40	4.3	2.60
09	400	8.0	30	<240	5.6		3.70	4.2	2.60
10	460	8.4	30	245	5.8		3.85	4.5	2.55
11	<450	8.6	27	230	5.8		(4.00)	4.4	2.60
12	415	8.7	26	<230	5.8		4.00	4.3	2.55
13	435	8.3	30	<230	6.0		4.00	4.2	2.55
14	435	8.1	28	230	6.0		3.90	4.1	2.55
15	470	8.0	28	230	5.6		3.70	3.8	2.55
16	(435)	8.0	28	245	5.3		3.55	3.7	2.60
17	---	8.1	29	250	---		3.30	3.7	2.65
18		8.2	29	(265)			2.85	3.7	2.70
19		8.4	29	(290)			2.15	3.0	2.70
20		8.4	26	(295)			----	(3.6)	2.70
21		8.0	26	<300			----	(3.0)	2.65
22		7.5	29	<300			----	(2.8)	2.60
23		7.2	29	(300)			----	1.8	2.50

Time: 15.0°E.
Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 54

Freiburg, Germany (48.1° N, 7.6° E) August 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	30	310				(2.6)	2.45
01		6.6	30	310				2.0	2.45
02		6.5	31	310				(1.8)	2.45
03		6.2	30	300				2.0	2.45
04		5.7	31	310		---	E	1.5	2.50
05	---	6.6	31	270	----	119	1.95	2.7	2.70
06	---	7.3	31	245	----	111	2.80	3.5	2.05
07	---	7.6	31	235	----	109	3.30	4.1	2.75
08	405	8.3	31	230	5.60	105	3.55	4.4	2.75
09	390	8.5	31	220	5.90	105	3.80	4.4	2.65
10	(440)	9.2	29	220	5.80	103	3.95	4.4	2.60
11	400	8.9	30	230	6.25	101	4.05	4.4	2.60
12	415	9.0	29	230	6.20	101	4.00	4.4	2.55
13	400	8.8	30	220	6.15	103	4.00	4.2	2.60
14	385	8.7	31	235	5.80	103	3.85	4.1	2.60
15	400	8.5	31	235	5.80	105	3.70	4.0	2.65
16	(360)	8.4	31	245	5.70	105	3.35	3.9	2.70
17	---	8.4	31	250	----	111	2.90	3.4	2.70
18		8.6	31	270		119	2.00	3.3	2.75
19		0.6	31	270		---	E	(3.4)	2.75
20		8.3	31	270				(3.2)	2.65
21		7.7	31	280				(3.7)	2.55
22		7.6	31	295				(3.2)	2.55
23		7.3	31	300				(2.9)	2.50

Time: 0.0°.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 55

Paramaribo, Surinam (5.8° N, 55.2° W) — July 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>11.1	12	370				2.9	(2.40)
01		11.1	12	340				2.9	(2.50)
02		10.7	11	310				2.6	(2.65)
03		10.2	11	300				2.7	2.55
04		9.8	11	290				2.7	(2.55)
05		9.2	11	300				2.7	2.65
06		9.0	11	270				2.5	2.75
07		8.0	11	250				2.7	2.85
08		7.2	11	265				2.6	2.70
09		6.7	11	250		---	E	2.8	2.80
10		7.5	11	250		100	2.3	2.8	2.80
11		8.8	11	240		100	3.2		2.90
12	---	9.7	12	240	---	100	3.7		2.60
13	(380)	11.0	12	(230)	---	100	4.0		2.50
14	380	11.4	12	<265	6.4	---	---		2.45
15	410	11.9	13	<250	6.5	110	4.2		2.40
16	425	12.2	13	(250)	6.4	110	4.3	4.3	(2.50)
17	410	12.5	13	<260	6.2	100	4.2	4.3	2.40
18	400	12.1	13	<250	6.3	100	4.1	4.7	2.45
19	430	11.7	13	(250)	6.3	100	3.8	5.0	2.40
20	450	11.2	13	(245)	5.9	100	3.6	4.5	2.25
21	(370)	11.2	11	(255)	---	100	2.8	3.8	2.30
22	---	10.5	12	300	---	---	E	4.5	(2.30)
23		10.6	12	375				4.2	(2.30)

Time: 0.0°.
Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 56

Tsumeb, South W. Africa (19.2° S, 17.7° E) — July 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.56	24	240		---	----	1.6	2.87
01		2.80	23	260		---	----	1.2	2.80
02		2.87	25	260		---	----	1.2	2.94
03		2.64	23	250		---	----		2.94
04		2.51	27	265		---	----		2.91
05		2.56	28	265		---	----		2.96
06		3.95	27	265		---	----		2.54
07		8.30	30	235		120	2.21		3.31
08		10.04	28	230		110	3.03		3.22
09		11.10	29	225		107	3.50		3.07
10		11.50	29	215		105	3.75		2.95
11		11.47	27	225		105	3.88		2.89
12		11.00	29	215		105	3.90		2.79
13	---	10.90	29	215	---	105	3.80	4.6	2.67
14	---	10.94	28	230	---	105	3.72	4.2	2.68
15	---	11.03	27	230	---	106	3.44	4.1	2.66
16		11.02	31	240		106	2.97	4.0	2.75
17		11.07	28	245		---	2.24	3.6	2.88
18		10.20	30	225		---	----	4.1	3.04
19		8.10	29	215		---	----	3.8	3.12
20		5.80	31	225		---	----	3.0	3.04
21		5.08	31	240		---	----	3.8	2.96
22		4.65	31	234		---	----	2.9	2.92
23		4.20	25	245		---	----	2.6	2.80

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 57

Deception I. (63.0° S, 60.7° W) — July 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.3	17	---					2.55
01		3.3	15	---					2.45
02		3.4	13	---					2.55
03		3.4	17	---					2.50
04		3.4	20	---					2.50
05		3.2	18	---					2.60
06		3.2	20	---					2.70
07		3.2	10	---					3.10
08		(3.2)	9	---					(2.95)
09		4.4	17	200					3.10
10		7.0	19	200					3.30
11		8.6	18	190					3.60
12		9.3	13	190					3.60
13		(9.7)	7	190					(3.60)
14		9.2	18	200					3.60
15		8.8	18	<200					3.60
16		7.6	16	195					3.45
17		6.6	18	195					3.40
18		5.1	17	<200					3.35
19		4.6	14	200					3.25
20		3.6	12	<240					2.80
21		(3.4)	9	---					(2.65)
22		3.2	11	---					2.55
23		3.3	16	---					2.50

Time: 45.0°W.
Sweep: 1.3 Mc to 18.0 Mc in 30 seconds.

Table 58

Freiburg, Germany (48.1° N, 7.8° E) — June 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.1	29	315				1.4	2.50
01		7.0	28	310					2.45
02		6.6	28	310				1.4	2.45
03		6.3	29	325		---	E	1.7	2.45
04	(540)	6.8	29	285	----	125	1.85	2.5	2.55
05	(510)	7.5	30	250	3.95	112	2.55	3.3	2.65
06	400	7.8	30	240	4.80	107	3.05	4.0	2.60
07	410	7.9	30	235	5.30	103	3.40	4.4	2.60
08	440	8.0	27	(230)	5.60	103	3.60	5.0	2.55
09	425	8.0	29	230	5.60	101	3.80	4.7	2.55
10	440	8.0	29	215	5.70	101	3.90	4.7	2.55
11	420	8.6	26	210	5.90	101	4.00	4.7	2.55
12	425	8.1	26	220	5.90	101	4.05	4.6	2.50
13	430	8.2	30	225	5.90	101	4.00	4.5	2.55
14	430	8.0	30	230	5.60	103	3.90	4.3	2.60
15	400	8.0	29	240	5.60	103	3.70	4.5	2.65
16	390	7.8	30	230	5.50	105	3.45	4.7	2.65
17	380	7.8	30	250	4.90	107	3.10	4.0	2.65
18	---	8.4	28	260		111	2.60	3.7	2.75
19		8.1	29	270		131	<1.65	(4.2)	2.70
20		8.2	28	275		---	----	(3.8)	2.65
21		8.2	30	290				(3.0)	2.55
22		8.0	30	295				(2.4)	2.50
23		7.6	30	300				1.6	2.50

Time: 0.0°.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 59

Paramaribo, Surinam (5.8° N, 55.2° W) — June 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		11.6	27	370				4.7	2.30
01		12.0	27	340				4.6	2.45
02		12.0	27	300				4.2	2.65
03		11.9	27	275				4.1	2.60
04		10.2	26	290				4.4	2.60
05		9.8	26	300				4.2	2.65
06		9.6	26	280				4.4	2.80
07		8.0	26	255				4.0	2.75
08		8.2	26	250				4.4	2.85
09		7.2	25	250				4.4	2.75
10		8.0	25	250		125	2.4	4.8	2.90
11	---	9.0	26	240	---	100	3.2	4.8	2.80
12	---	10.0	25	225	---	100	3.6	4.6	2.65
13	(320)	11.0	24	225	6.2	100	3.9	4.8	2.50
14	375	11.9	25	225	6.8	100	4.1	5.0	2.50
15	375	12.0	26	225	6.8	100	4.3	5.0	2.50
16	420	12.6	27	235	6.6	100	4.3	6.2	2.40
17	410	12.7	26	225	6.5	100	4.2	6.4	2.50
18	405	12.6	27	225	6.4	105	4.0	5.6	2.45
19	420	12.0	27	225	6.3	100	3.8	5.6	2.35
20	435	11.7	27	240	6.4	100	3.4	5.2	2.35
21	(400)	11.3	25	270	---	---	2.7	5.4	2.40
22		11.0	26	305		---	1.0	4.8	2.35
23		10.6	26	370				4.8	2.30

Time: 0.0°.
Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 60

Hollandia, Netherlands New Guinea (2.5° S, 140.8° E) — June 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00	285	13.2	25	210	---	100	4.0		3.15
01	315	13.3	25	<250	8.0	100	4.2		3.00
02	350	13.6	12	<250	7.6	100	(4.0)		2.90
03	380	13.4	14	<270	8.7	100	(4.1)		2.85
04	400	13.5	13	<260	7.2	100	4.0		2.65
05	420	13.2	16	(250)	7.0	100	3.9		2.65
06	405	13.4	18	(220)	7.0	100	3.8	4.2	2.65
07	375	13.2	13	220	7.3	100	3.3	4.0	2.65
08	(405)	13.6	14	245		120	2.5	4.2	2.70
09	---	(13.0)	7	255		---	1.4	3.8	(2.65)
10		(13.6)	5	200				3.7	----
11		(13.2)	6	250				3.9	(2.80)
12		(13.5)	8	215				3.0	(2.85)
13		13.5	14	210				3.8	2.95
14		12.6	12	200				3.4	3.15
15		11.6	20	200				3.3	3.15
16		9.0	23	200				3.3	3.05
17		8.2	25	200				3.5	2.95
18		8.0	26	205				3.7	3.10
19		7.2	26	205				3.8	3.20
20		6.6	26	220				3.7	3.20
21	(250)	9.8	26	240		120	2.3	3.0	3.30
22	250	13.0	21	220		100	3.1	3.8	3.35
23	245	13.5	23	210		100	3.8	4.0	3.35

Time: 0.0°.
Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 61

Tsumeb, South W. Africa (19.2° S, 17.7° E) June 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.60	24	250		---	----	2.0	2.72
01		3.24	24	268		---	----	2.2	2.71
02		3.02	21	272		---	----	1.6	2.79
03		2.76	21	255		---	----	1.7	2.91
04		2.50	21	255		---	----		2.92
05		2.47	23	275		---	----		2.94
06		4.26	26	278		---	----		2.63
07		8.50	27	238		120	2.20		3.25
08		11.30	30	231		110	3.00		3.18
09		12.08	29	225		109	3.44		3.06
10		12.20	29	220		108	3.74		2.97
11		12.10	29	220		106	3.87	4.4	2.86
12		11.70	30	230		---	3.90	4.4	2.70
13		11.76	30	230		---	3.82	4.7	2.67
14		11.61	30	232		106	3.64	4.4	2.62
15	---	11.66	29	235	---	106	3.38	4.2	2.63
16		11.58	28	245		---	2.93	4.0	2.73
17		11.65	29	245		---	2.00	3.7	2.85
18		10.64	30	225				3.8	3.00
19		8.54	30	215				3.3	3.02
20		7.07	29	235				3.7	3.02
21		6.16	27	235				2.8	3.02
22		4.89	28	240		---	----	3.2	2.86
23		4.30	24	252		---	----	2.2	2.68

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 62

Freiburg, Germany (48.1° N, 7.8° E) May 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.5	31	330					2.40
01		7.0	31	320				1.5	2.40
02		6.8	31	315				1.4	2.40
03		6.6	31	310				1.2	2.40
04		6.0	31	295		---	1.50	2.0	2.55
05	---	7.4	31	260	----	113	2.40	2.8	2.65
06	(470)	7.8	31	240	----	109	2.95	3.3	2.65
07	(400)	8.2	31	240	5.40	107	3.35	3.9	2.60
08	420	0.4	31	230	5.65	105	3.60	4.2	2.55
09	470	9.0	28	230	5.80	103	3.75	4.3	2.50
10	435	9.2	30	230	6.00	102	3.90	4.3	2.50
11	435	9.1	31	230	6.05	101	4.00	4.4	2.45
12	430	9.4	31	230	6.10	101	4.00	4.2	2.45
13	420	9.6	31	230	6.00	103	4.00	4.2	2.50
14	420	9.5	30	230	5.80	106	3.80	4.0	2.50
15	425	9.1	31	235	5.70	107	3.65	4.2	2.55
16	---	9.1	29	245	----	107	3.35	3.9	2.60
17		9.0	30	250		109	2.90	3.5	2.65
18		8.9	30	270		116	2.25	2.7	2.70
19		8.9	30	275		---	1.40	2.1	2.70
20		8.5	30	275				2.0	2.55
21		8.2	30	290				1.4	2.50
22		8.0	31	310					2.45
23		8.0	30	320					2.40

Time: 0.0°.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 63

Tsumeb, South W. Africa (19.2° S, 17.7° E) May 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.66	26	250				1.9	2.77
01		4.05	29	252					2.83
02		4.44	29	260					2.91
03		3.88	28	235					3.00
04		3.23	26	238					2.92
05		3.04	28	250					2.78
06		5.78	29	267		---	E	2.0	2.70
07		9.66	30	230		116	2.42		3.18
08		11.93	30	230		108	3.14		3.03
09		13.22	30	223		106	3.56		2.98
10		13.76	29	217		105	3.76		2.87
11		13.70	29	220		---	3.86		2.79
12		13.60	30	230		---	3.91	3.9	2.70
13		13.50	31	225		---	3.86	4.7	2.65
14		13.40	31	230		---	3.73	4.6	2.61
15		13.30	31	235		109	3.49	4.5	2.61
16		13.03	31	240		115	3.00	4.0	2.67
17		12.87	29	245		---	2.08	3.1	2.77
18		12.00	25	230				4.0	2.87
19		10.15	27	225				3.8	2.88
20		9.58	30	237		---	----	3.6	2.90
21		8.92	30	238				3.4	2.94
22		7.45	28	230				2.8	2.90
23		5.99	20	235		---	----	2.0	2.79

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 64

Macquarie I. (54.5° S, 159.0° E) May 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.0)	9	(270)				3.6	(2.70)
01		>3.9	7	(260)					----
02		>4.2	9	(260)					----
03		4.3	10	250					(2.90)
04		(4.0)	9	(250)					(2.05)
05		(4.4)	8	(250)					(3.00)
06		(4.0)	7	(250)		---	---	(3.0)	----
07		>5.0	9	(230)		---	<2.4		----
08		>6.3	6	(220)		100	2.6		----
09		>7.7	7	(210)		100	<3.0		----
10		>6.0	14	210		100	3.0		
11		>6.7	14	210		100	<3.1		
12		>7.4	10	210		100	3.1		----
13		>7.5	16	220		100	(2.8)		
14		>7.0	13	210		100	2.5		----
15		>6.8	14	220		100	<2.3		----
16		>6.5	13	210					----
17		>6.9	10	240				3.8	----
18		>5.9	6	(220)				4.0	
19		>5.5	0	(230)				4.0	
20		>4.6	10	250				3.7	----
21		(5.5)	9	(270)				3.9	----
22		>4.3	7	(200)				4.1	----
23		(4.3)	7	(280)				4.0	----

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 65

Freiburg, Germany (48.1° N, 7.6° E) March 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	31	320					2.35
01		6.0	30	310					2.35
02		5.8	31	335					2.30
03		5.4	31	330					2.30
04		5.2	31	315					2.40
05		4.9	29	295					2.50
06		6.4	30	255		125	1.75	1.8	2.90
07		8.2	30	240		111	2.65		2.95
08		10.0	31	235		109	3.10	3.1	2.90
09	---	11.6	30	235	---	109	3.40	3.4	2.80
10	---	12.0	29	230	---	109	3.50		2.75
11	---	13.0	28	230	---	109	3.70		2.65
12	---	13.0	29	230		109	3.75		2.65
13	---	13.0	31	240		109	3.65		2.65
14	---	12.4	31	235		109	3.50		2.65
15		12.1	31	240		110	3.20		2.65
16		11.8	28	240		111	2.85		2.70
17		11.4	28	250		119	2.30		2.80
18		10.8	29	240		---	E	1.5	2.75
19		9.3	31	240					2.70
20		8.3	30	240					2.65
21		7.6	31	260					2.50
22		6.9	31	285					2.45
23		6.8	31	310					2.35

Time: 0.0°.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 66

Oourbes, Belgium (50.1° N, 4.6° E) January 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.9	27	310				<1.6	2.45
01		4.7	25	300					2.45
02		4.6	26	300					2.50
03		4.4	26	300					2.60
04		4.0	26	(285)				<1.6	2.70
05		3.7	26	<295				<1.6	2.60
06		3.6	26	<280				<1.6	2.70
07		5.4	26	240		---	<1.60	<1.6	2.80
08		9.6	26	230		(125)	2.25	2.3	(2.90)
09		(12.4)	24	225		(118)	(2.70)	<2.8	(3.10)
10		(13.6)	23	220		119	3.00	3.1	(3.10)
11		14.0	28	225		115	3.15	3.3	3.05
12		13.8	28	225		117	3.20	<3.4	2.95
13		13.8	28	225		<119	3.10		2.90
14		13.3	28	230		<118	<3.00		2.90
15		12.6	28	230		117	<2.60		2.90
16		(12.0)	27	230		(131)	2.00		(2.90)
17		>10.6	28	220				<1.6	(2.90)
18		(8.8)	29	220				<1.6	(2.95)
19		6.8	27	230				<1.6	2.85
20		6.1	27	250				<1.6	2.70
21		(6.2)	4	---					----
22		(5.5)	4	---					----
23		(5.3)	4	---					----

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 67

Tsumeb, South W. Africa (19.2° S, 17.7° E) January 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.85	31	280				3.3	2.50
01		7.25	31	280				2.4	2.50
02		6.87	31	280				2.3	2.55
03		6.23	31	275				2.6	2.50
04		5.65	31	280				2.3	2.40
05		5.50	31	315				3.0	2.50
06		7.65	31	265		---	2.45	4.0	2.75
07		9.22	30	245		110	3.30	4.0	2.70
08		10.48	30	240		105	3.75	4.2	2.50
09	---	11.15	30	225	----	105	4.10	4.5	2.40
10	480	11.45	30	220	7.00	105	4.35	4.6	2.30
11	475	11.80	30	220	6.90	---	4.45	4.7	2.25
12	465	11.98	31	220	6.70	---	4.50	4.9	2.25
13	465	11.90	31	220	6.60	---	4.40	4.9	2.25
14	470	11.30	29	220	6.40	---	4.30	4.8	2.25
15	460	11.00	30	220	6.25	105	4.00	4.8	2.25
16	470	10.65	30	235	5.90	105	3.65	4.4	2.25
17	---	10.60	31	250	----	110	3.10	4.0	2.30
18		10.88	30	280		---	2.35	3.2	2.40
19		10.70	31	300		---	E	3.0	2.50
20		10.17	30	280				2.6	2.50
21		9.55	31	285				2.5	2.45
22		9.08	30	290				2.5	2.50
23		8.70	31	290				3.4	2.50

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 68

Ourbes, Belgium (50.1° N, 4.6° E) October 1957

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	19	305				<1.6	2.50
01		6.3	20	<300				1.2	2.50
02		6.0	19	290					2.45
03		5.6	19	280				<1.1	2.45
04		5.4	19	255				<1.3	2.60
05		5.0	19	255				<1.6	2.60
06		6.9	19	245		---	1.80		2.85
07		10.3	18	225		109	2.60		3.00
08		>13.0	19	220		103	3.05		3.05
09		>14.4	17	220		103	3.30	3.4	3.00
10		(14.7)	19	215		104	3.50	3.7	(2.95)
11	---	>14.7	17	215	---	105	3.60		(2.80)
12		14.2	17	215		<107	3.60		2.80
13		(13.7)	15	220		107	3.55		(2.75)
14		(13.6)	17	225		110	3.35		(2.65)
15		(13.6)	16	230		111	3.00		(2.75)
16		(12.9)	19	230		113	2.35		(2.75)
17		>12.1	18	235		---	----	<2.0	2.75
18		>10.4	18	230				1.7	(2.75)
19		(9.1)	21	230				<1.6	(2.75)
20		8.4	22	240				<1.6	2.65
21		(7.7)	21	<260				<1.6	(2.65)
22		7.2	20	270				<1.6	2.45
23		7.0	19	(305)				<1.6	2.50

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 69

Kerguelen I. (49.4° S, 70.3° E) June 1957

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.0	19	(295)		---	----	1.5	3.00
01		2.0	17	(290)				1.5	3.00
02		2.0	17	290				1.5	3.00
03		2.2	20	290				1.5	2.90
04		2.2	21	300				1.4	2.75
05		2.2	19	(300)				1.5	2.70
06		2.3	22	310				1.5	2.75
07		2.7	21	(290)					2.65
08		5.5	24	250		---	1.75		3.25
09		8.0	24	230		105	2.50		3.30
10		10.0	23	235		105	2.80		3.20
11	---	10.4	15	240		105	3.00		3.20
12	---	>11.2	11	240		105	3.10		----
13	---	>12.0	10	235		105	3.00		----
14		>12.0	7	235		105	2.90		----
15		(12.0)	7	230		105	2.50		----
16		>11.5	8	210		---	(2.00)		----
17		>10.0	12	200		---	----	1.5	(3.20)
18		8.7	21	220		---	----		3.25
19		6.0	22	215		---	----	1.	3.40
20		3.4	21	210		---	----		3.50
21		2.5	12	245		---	----	1.4	(3.25)
22		2.0	13	(230)				1.3	(3.20)
23		2.0	11	(260)				1.5	(3.00)

Time: Local.
Sweep: 0.88 Mc to 14.14 Mc in 10 minutes, automatic operation.

Table 70

Terre Adelie (66.7° S, 140.0° E) June 1957

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.4)	9	255					----
01		(3.2)	8	270		---	----		----
02		(3.5)	7	270		---	----	1.8	----
03		(2.8)	8	275		---	----	1.8	----
04		(3.0)	8	290		---	----	1.8	----
05		(3.0)	7	280		---	----		----
06		(2.8)	4	280		---	----	1.8	
07		(3.4)	6	295		---	----	1.9	----
08		(3.5)	5	270		---	E	1.8	----
09		(4.4)	6	255		---	(1.50)	1.8	
10		(6.6)	6	250		---	(1.70)	1.7	----
11		(7.4)	6	250		---	----	1.7	----
12		(7.5)	5	250		---	----	1.8	
13		(6.2)	2	250		---	----	1.8	----
14		(8.0)	3	250		---	1.55	1.8	----
15		(6.8)	6	250		---	E	2.0	
16		(7.0)	7	250		---	----	1.8	
17		(7.1)	7	250		---	----		----
18		(6.9)	5	240		---	----	1.9	----
19		(6.6)	8	250		---	----	1.8	----
20		(6.3)	6	250		---	----	1.7	----
21		(5.8)	8	250		---	----	2.0	----
22		(4.0)	5	250		---	----	1.9	----
23		(4.6)	8	255		---	----	1.7	----

Time: 135.0°E.
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 71

Terre Adelie (66.7° S, 140.0° E) May 1957

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.7)	3	255		---	----	1.8	----
01		(3.9)	7	260		---	----		----
02		(3.7)	11	270		---	----	1.8	----
03		(4.3)	8	260		---	----	1.9	----
04		(3.4)	7	295		---	----	1.9	----
05		(3.0)	4	290		---	E	1.9	----
06		(3.5)	7	270		---	----	2.4	----
07		(3.6)	7	265		---	E	2.6	----
08		(5.9)	5	270		---	1.55	2.6	
09		(8.4)	4	250		---	(1.80)	1.8	----
10		(8.2)	5	250		---	1.90	2.0	----
11		(8.8)	2	250		---	(2.10)		
12		(7.5)	5	250		---	(2.25)		----
13		(7.9)	3	250		---	(2.00)		----
14		(8.4)	6	250		---	1.80	1.9	----
15		(7.8)	8	245		---	1.60	2.4	----
16		(7.3)	5	250		---	----	3.1	----
17		(9.0)	5	250		---	----	2.8	----
18		>8.0	7	250				2.6	----
19		(7.0)	5	250				2.4	----
20		(6.6)	4	245		---	----	1.9	----
21		(5.0)	5	250		---	----	1.8	----
22		(5.0)	5	250				1.8	----
23		(4.2)	6	250				1.8	----

Time: 135.0°E.
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 72

Lulea, Sweden (65.6° N, 22.1° E) November 1955

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(2.4)	2	(330)					----
01		(2.2)	2	(300)					----
02		(2.3)	5	320					----
03		(2.0)	7	305					
04		(2.3)	7	300					----
05		(2.3)	13	280					(2.95)
06		(2.3)	15	295					(3.0)
07		2.6	14	270					(3.1)
08		4.6	21	230		---	---		3.2
09		5.3	27	220		125	1.8		3.4
10		6.8	25	210		110	2.0		3.5
11		7.0	27	210		110	2.0		3.5
12	---	7.7	27	210	---	115	2.0		3.5
13		7.3	28	210		---	1.9		3.5
14		7.0	25	210		---	1.8		3.4
15		6.1	24	210		---	E		3.4
16		5.5	24	210					3.3
17		4.5	19	220					3.3
18		(4.3)	16	240					(3.2)
19		>3.8	14	250					(3.2)
20		>2.6	8	(260)					----
21		(2.5)	4	(290)					----
22		(3.2)	2	(300)					
23		(2.5)	3	(315)					

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

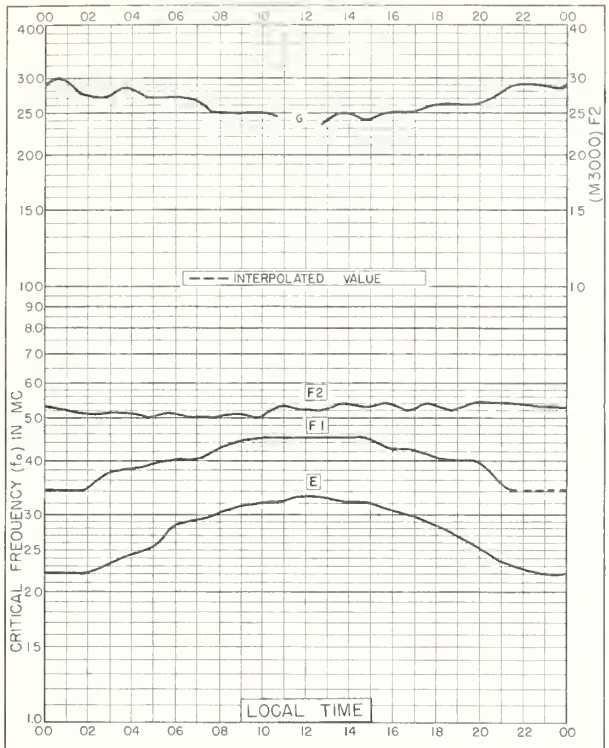


Fig. 1. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JULY 1960

NBS 503

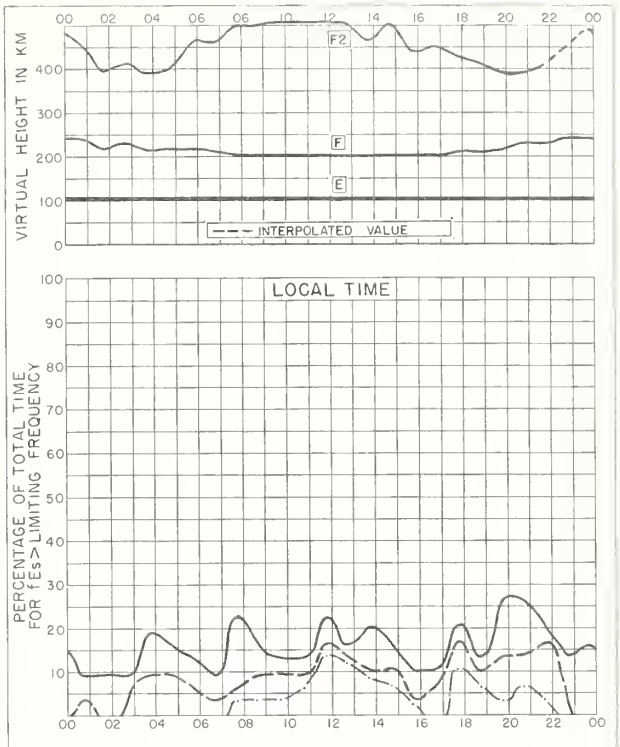


Fig. 2. RESOLUTE BAY, CANADA JULY 1960

NBS 490

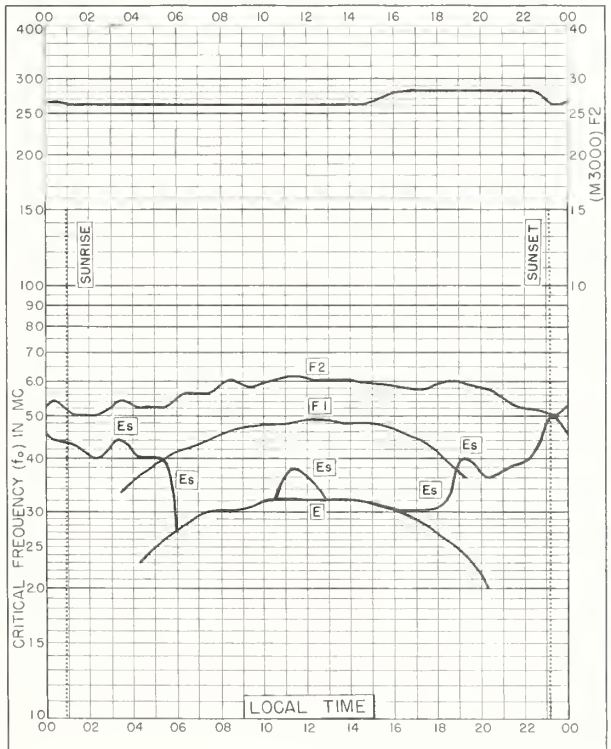


Fig. 3. KIRUNA, SWEDEN
67.8°N, 20.3°E JULY 1960

NBS 503

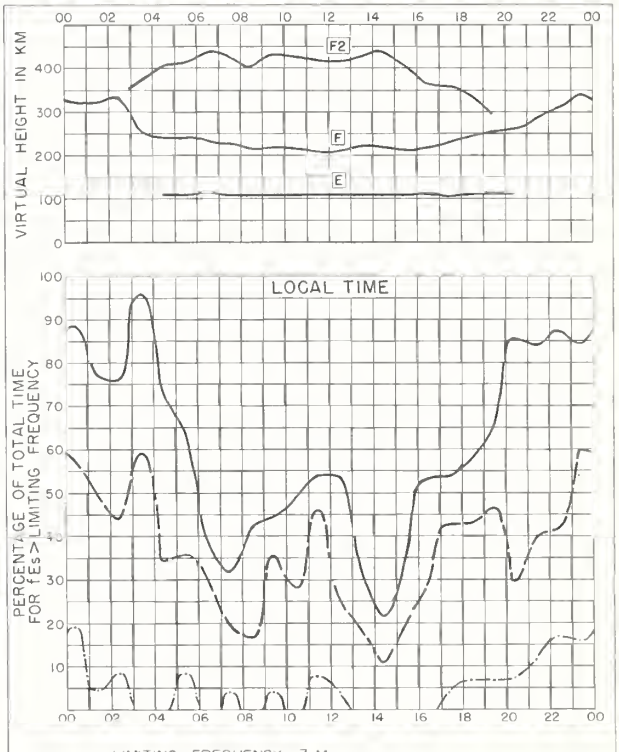


Fig 4. KIRUNA, SWEDEN JULY 1960

NBS 490

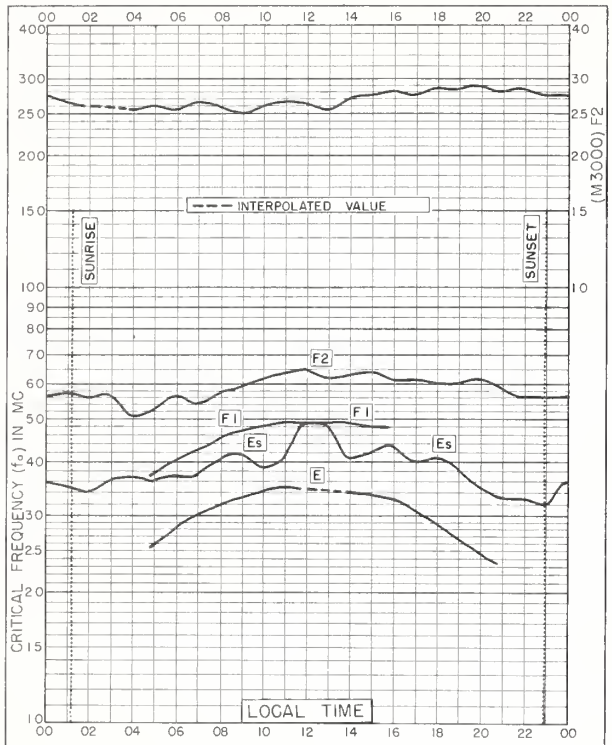


Fig. 5. SODANKYLA, FINLAND
67.4°N, 26.6°E JULY 1960

NBS 503

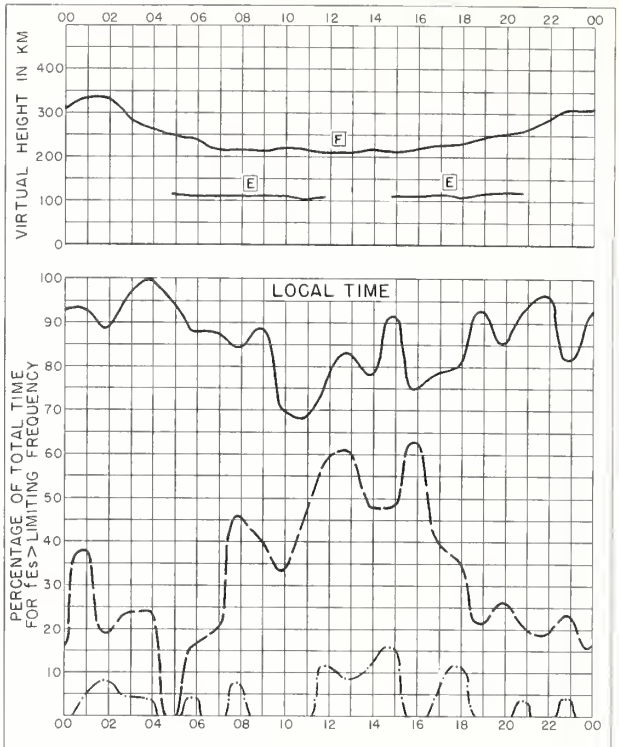


Fig. 6. SODANKYLA, FINLAND JULY 1960

NBS 490

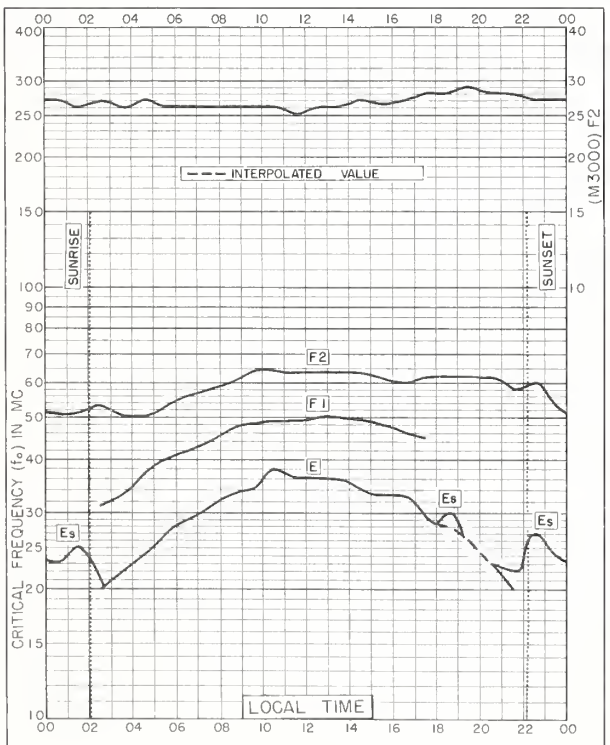


Fig. 7. LULEA, SWEDEN
65.6°N, 22.1°E JULY 1960

NBS 503

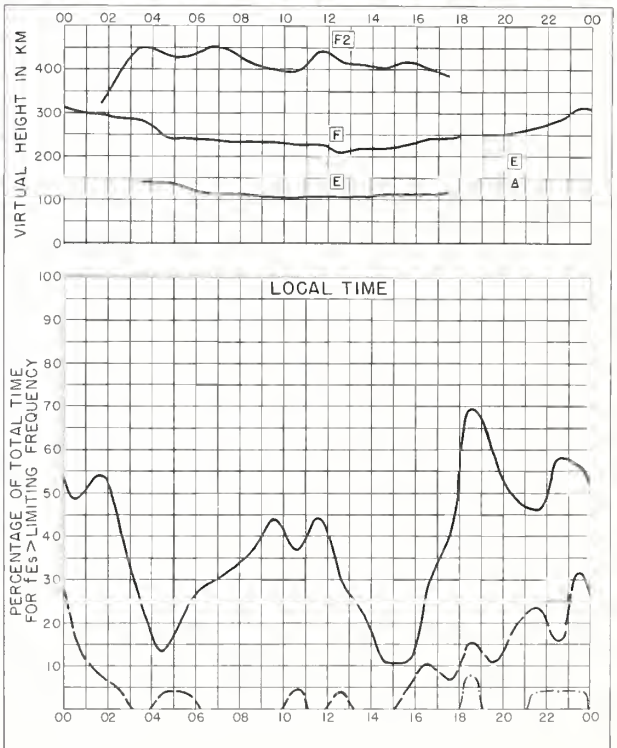


Fig. 8. LULEA, SWEDEN JULY 1960

NBS 490

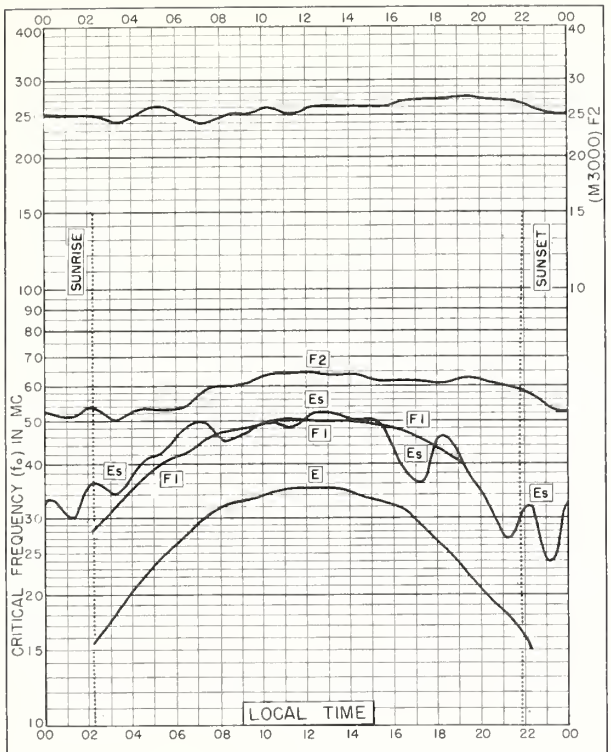


Fig. 9. LYCKSELE, SWEDEN
64.6°N, 18.8°E JULY 1960

NBS 503

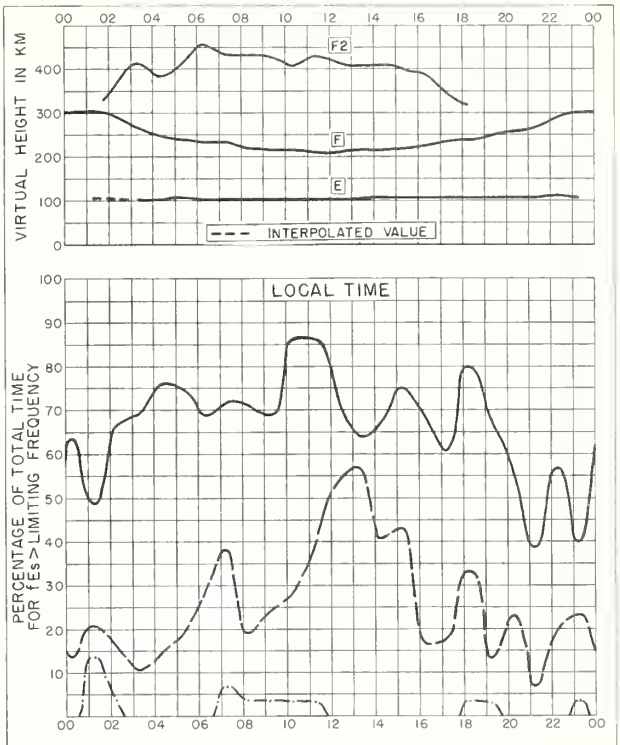


Fig. 10. LYCKSELE, SWEDEN JULY 1960

NBS 490

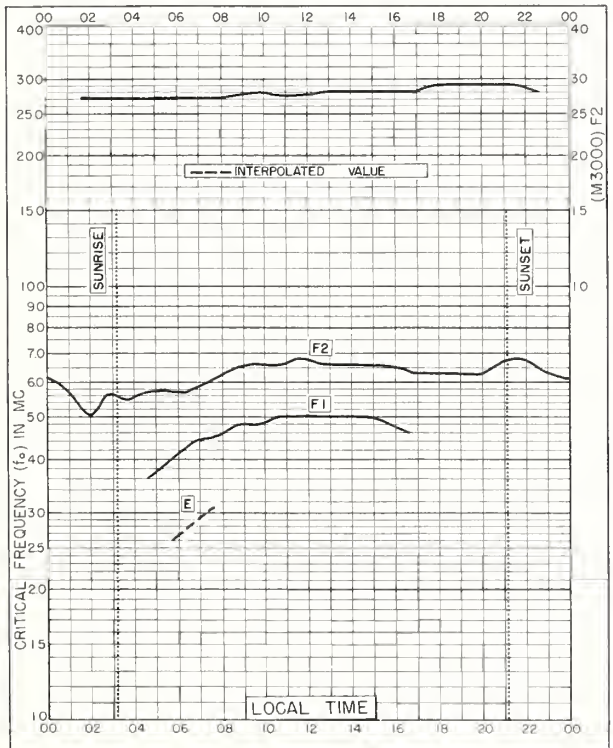


Fig. 11. NURMIJARVI, FINLAND
60.5°N, 24.6°E JULY 1960

NBS 503

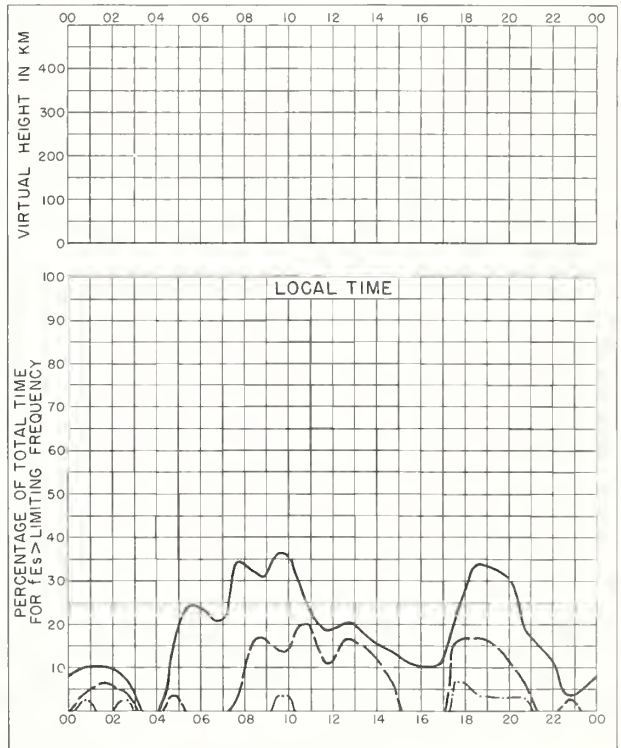


Fig. 12. NURMIJARVI, FINLAND JULY 1960

NBS 490

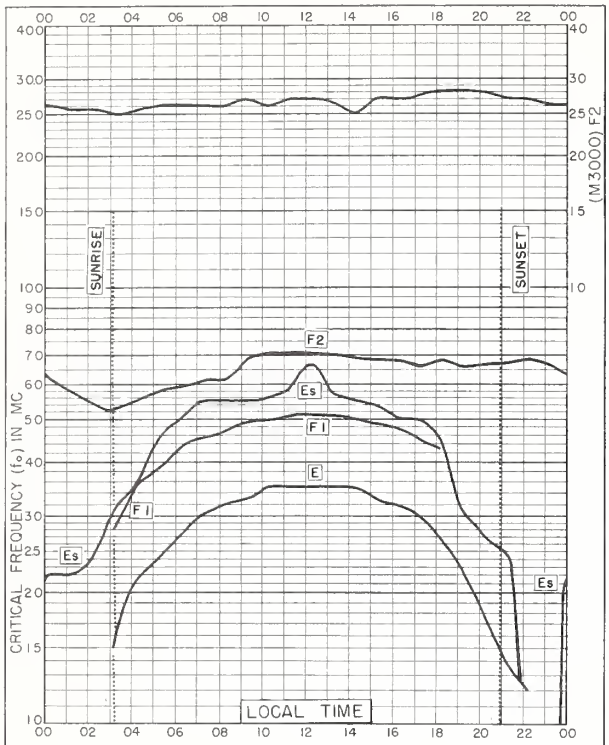


Fig. 13. UPSALA, SWEDEN
59.8°N, 17.6°E JULY 1960

NBS 503

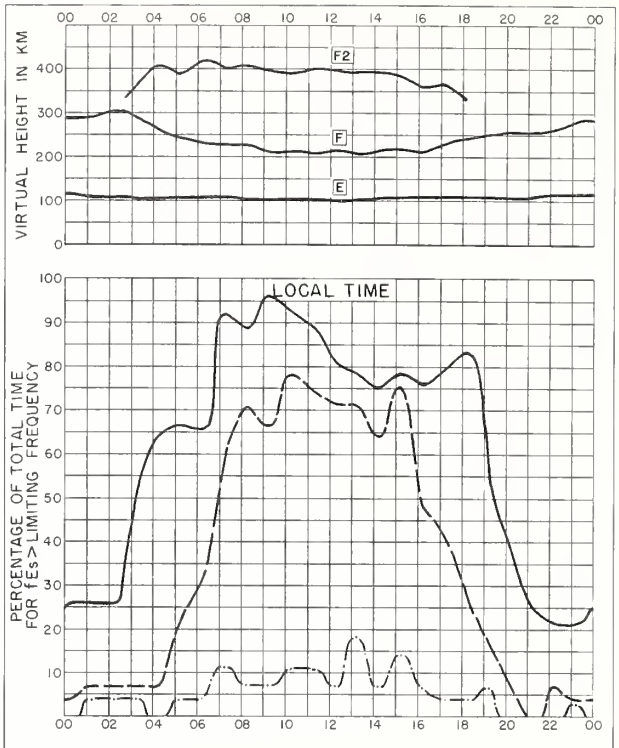


Fig. 14. UPSALA, SWEDEN JULY 1960

NBS 490

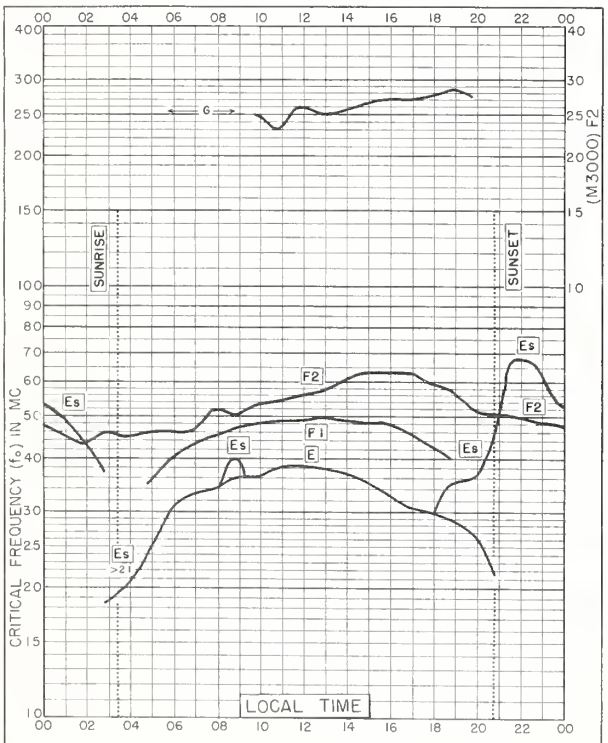


Fig. 15. CHURCHILL, CANADA
58.8°N, 94.2°W JULY 1960

NBS 503

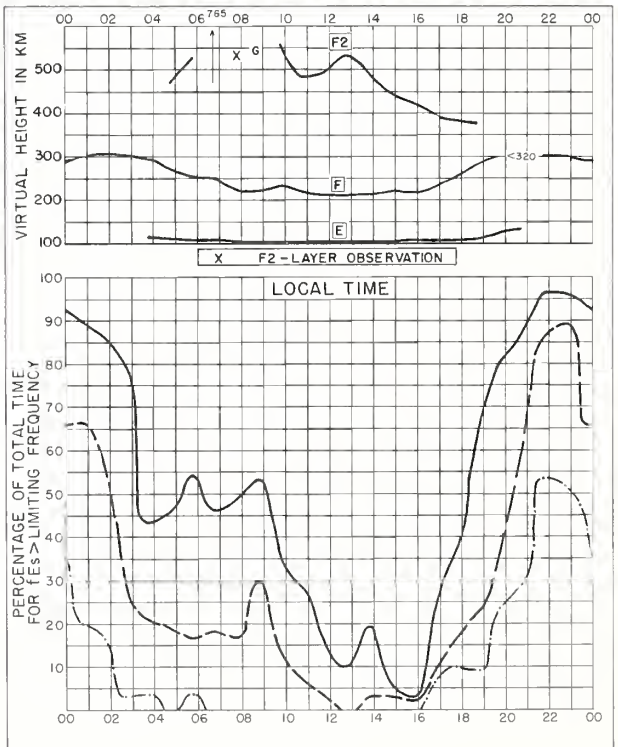


Fig. 16. CHURCHILL, CANADA JULY 1960

NBS 490

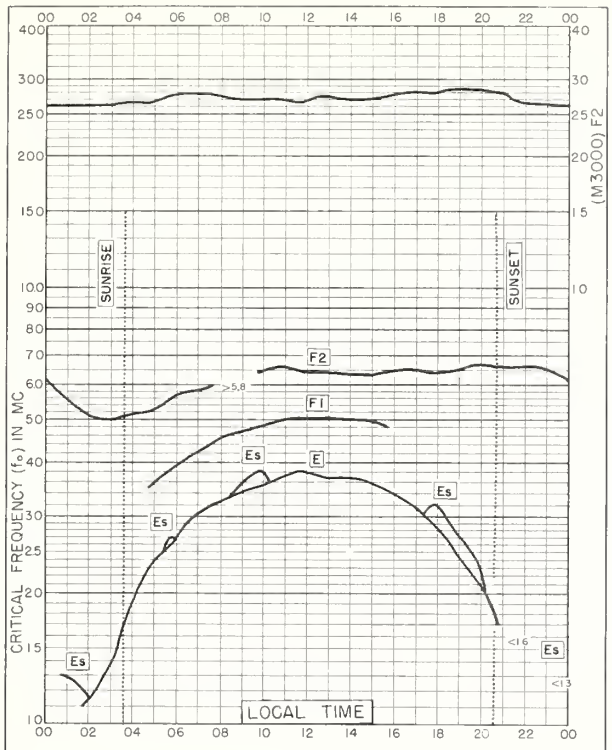


Fig. 17. INVERNESS, SCOTLAND
57.4°N, 4.2°W JULY 1960

NBS 503

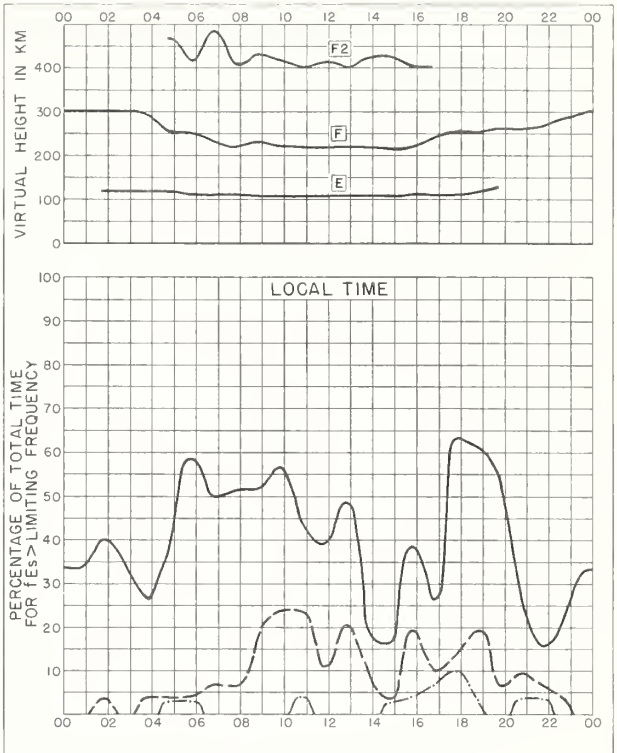


Fig. 18. INVERNESS, SCOTLAND JULY 1960

NBS 490

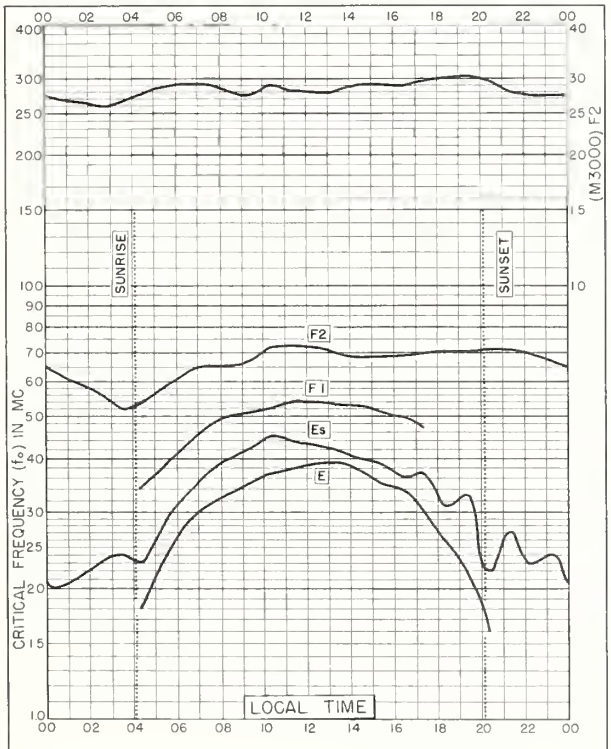


Fig. 19. De BILT, HOLLAND
52.1°N, 5.2°E JULY 1960

NBS 503

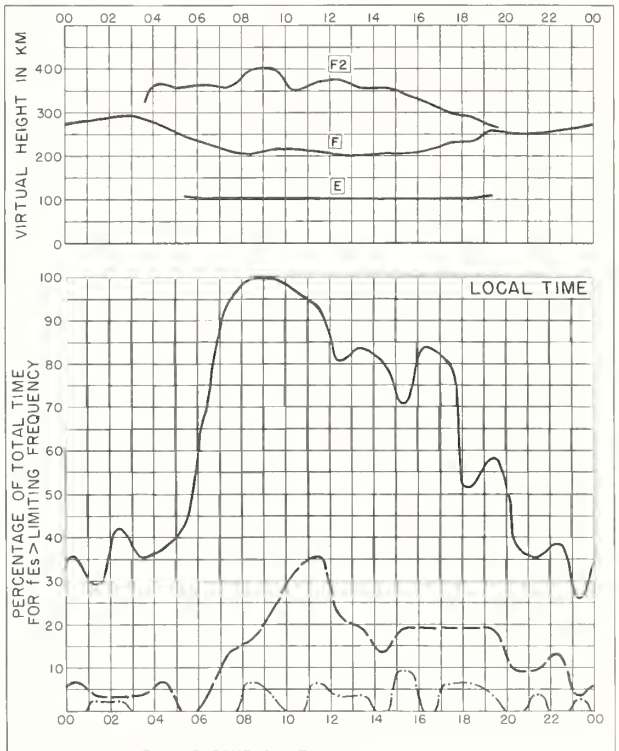


Fig. 20. De BILT, HOLLAND JULY 1960

NBS 490

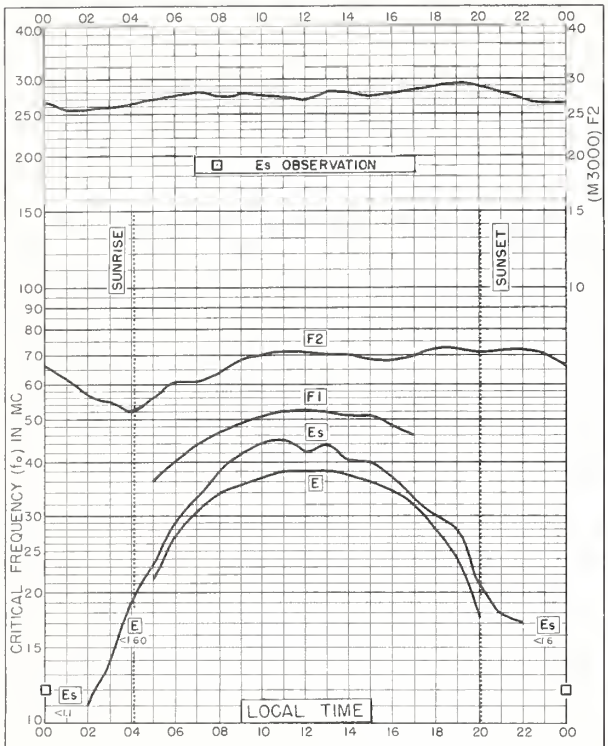


Fig. 21. SLOUGH, ENGLAND
51.5°N, 0.6°W JULY 1960

NBS 503

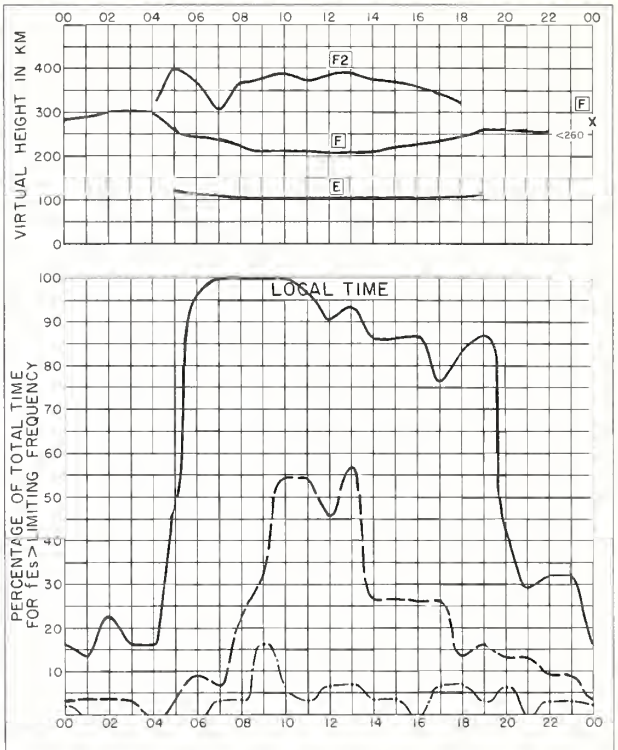


Fig. 22. SLOUGH, ENGLAND JULY 1960

NBS 490

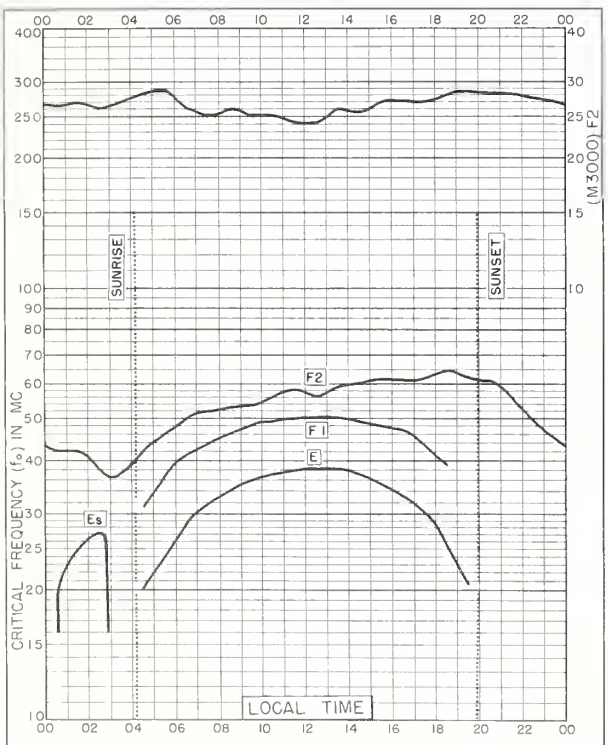


Fig. 23. WINNIPEG, CANADA
49.9°N, 97.4°W JULY 1960

NBS 503

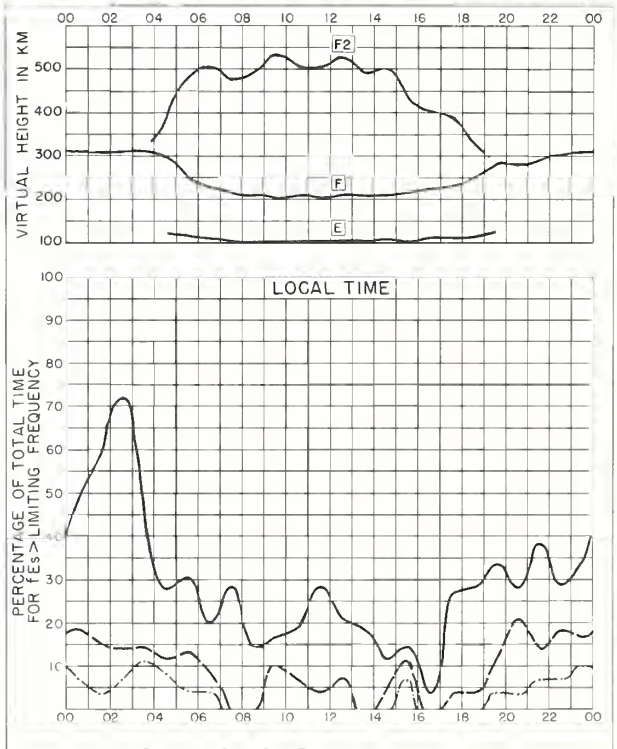


Fig. 24. WINNIPEG, CANADA JULY 1960

NBS 490

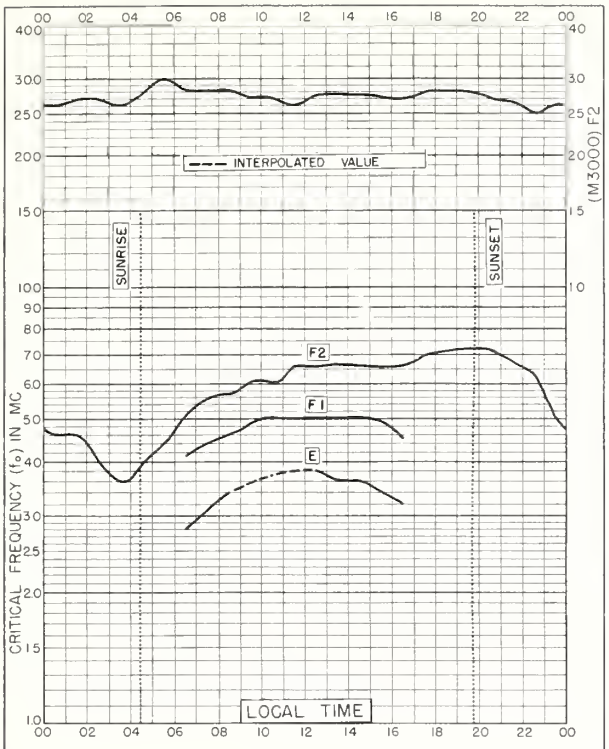


Fig. 25. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JULY 1960

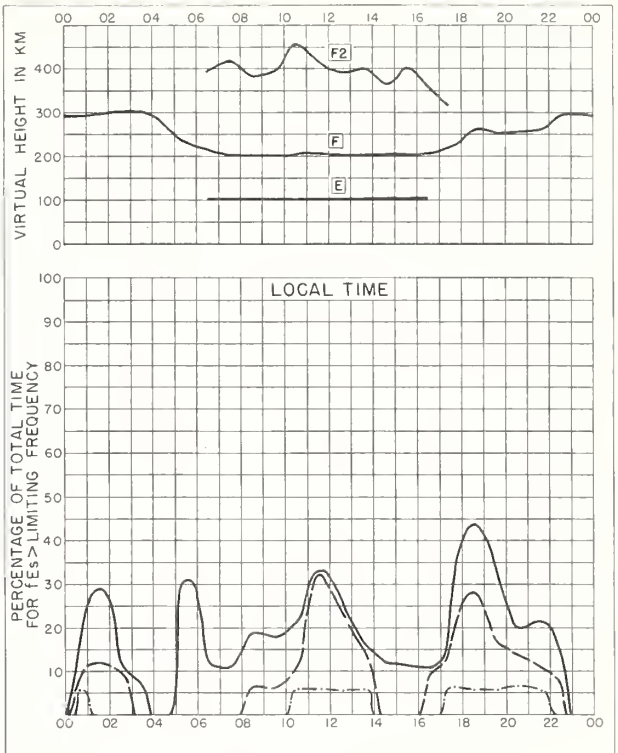


Fig. 26. ST. JOHN'S, NEWFOUNDLAND JULY 1960

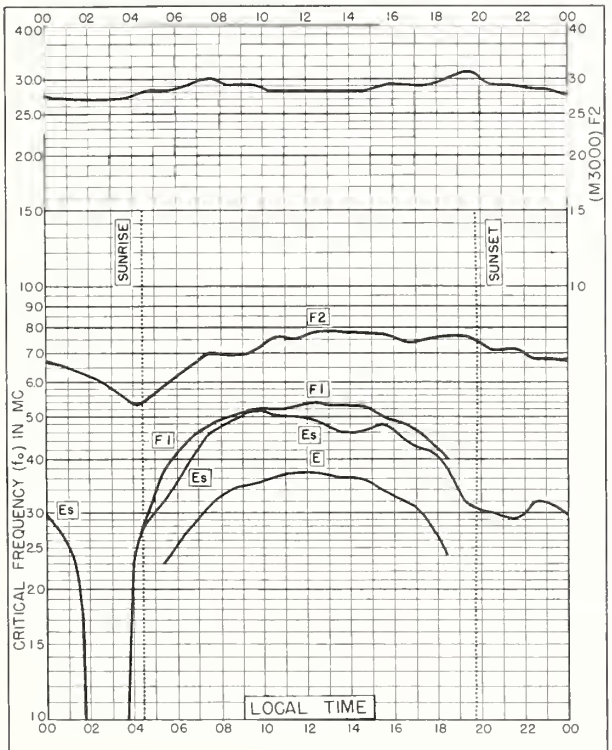


Fig. 27. SOTTENS, SWITZERLAND
46.6°N, 6.7°E JULY 1960

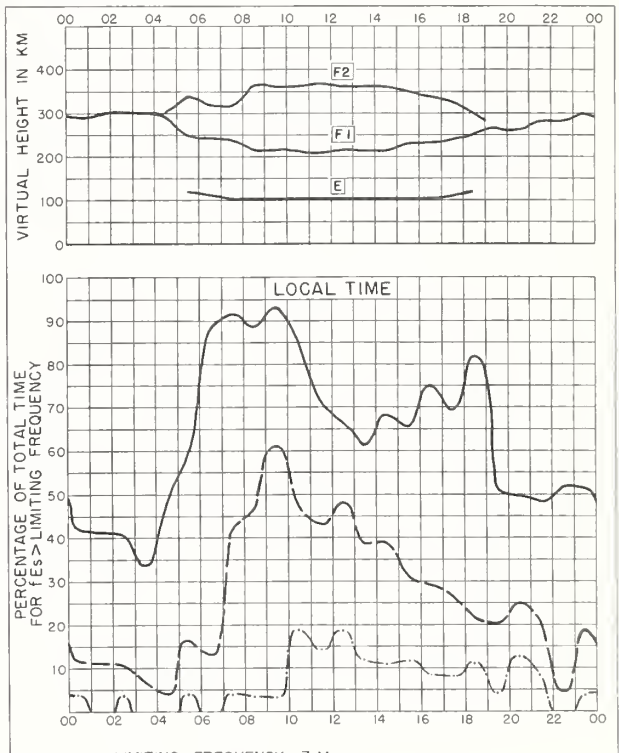


Fig. 28. SOTTENS, SWITZERLAND JULY 1960

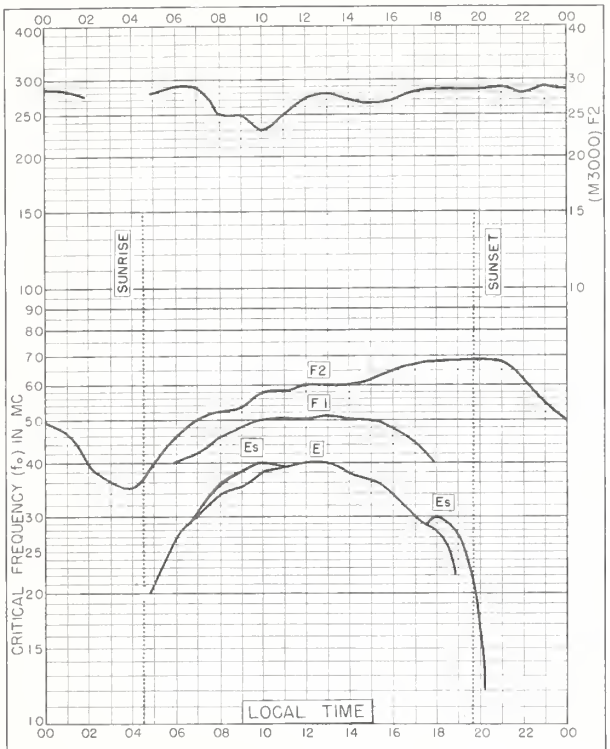


Fig. 29. OTTAWA, CANADA
45.4°N, 75.9°W JULY 1960

NBS 503

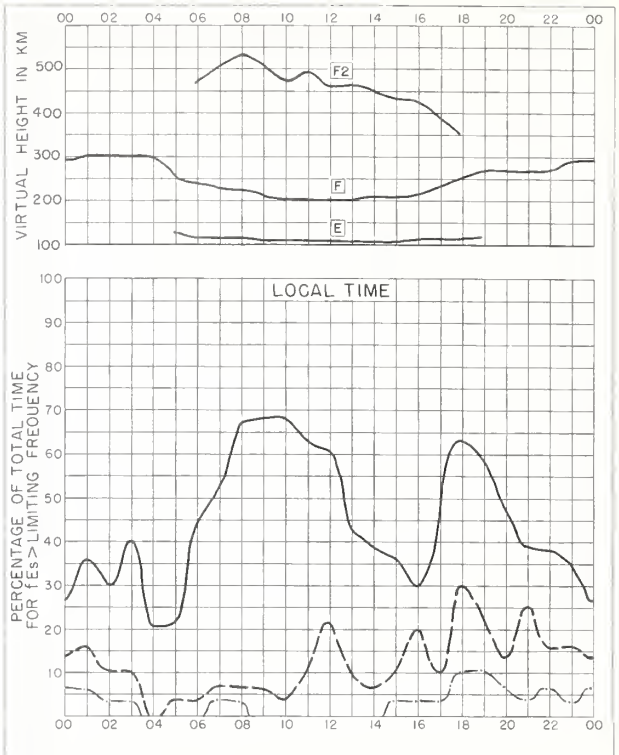


Fig. 30. OTTAWA, CANADA JULY 1960

NBS 490

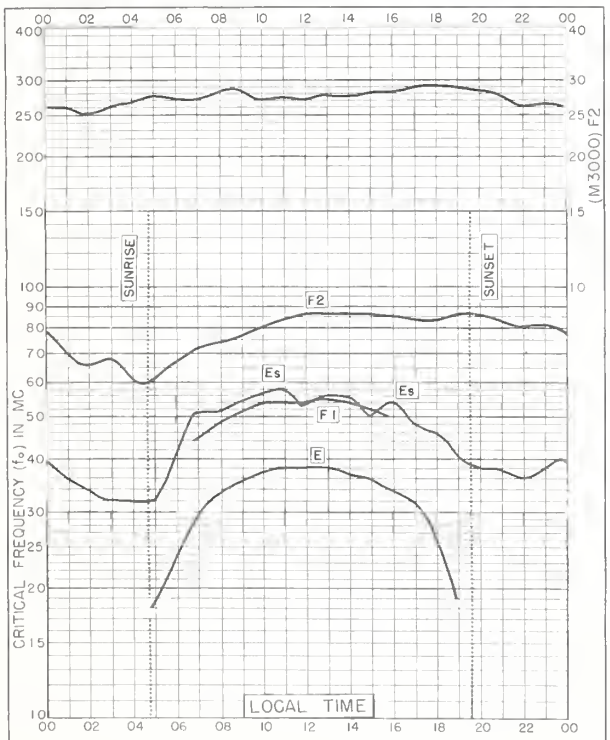


Fig. 31. ROME, ITALY
41.8°N, 12.5°E JULY 1960

NBS 503

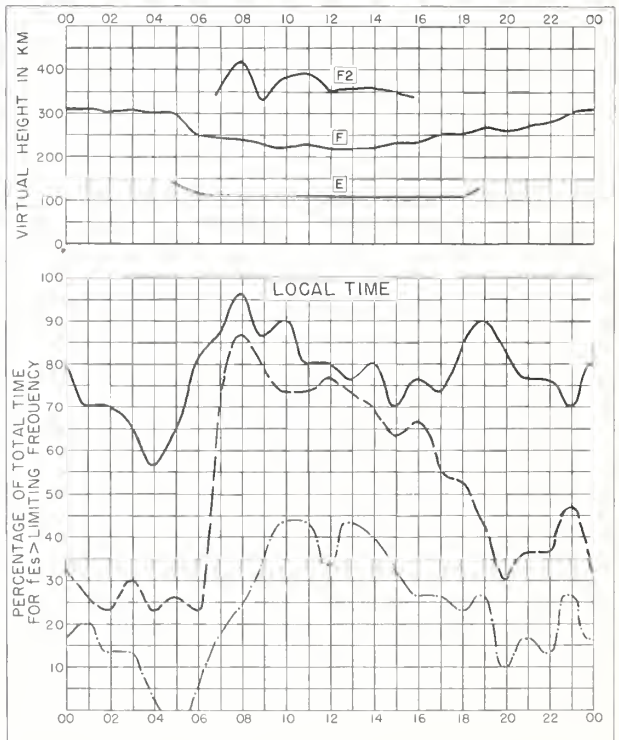


Fig. 32. ROME, ITALY JULY 1960

NBS 490

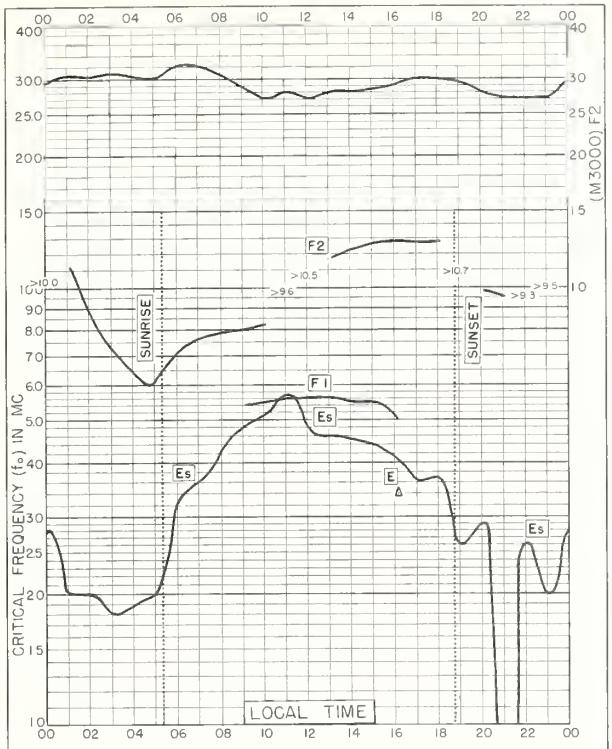


Fig. 33. FORMOSA, CHINA
25.0°N, 121.5°E JULY 1960

NBS 503

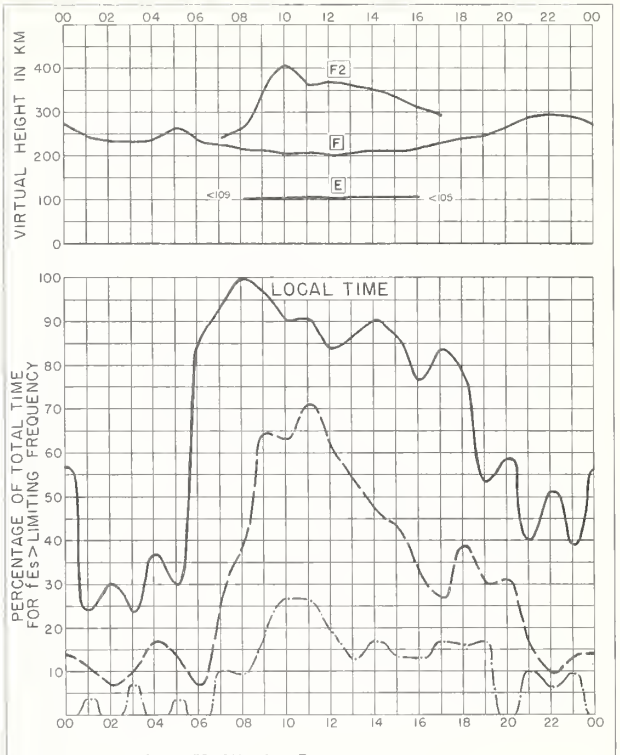


Fig. 34. FORMOSA, CHINA JULY 1960

NBS 490

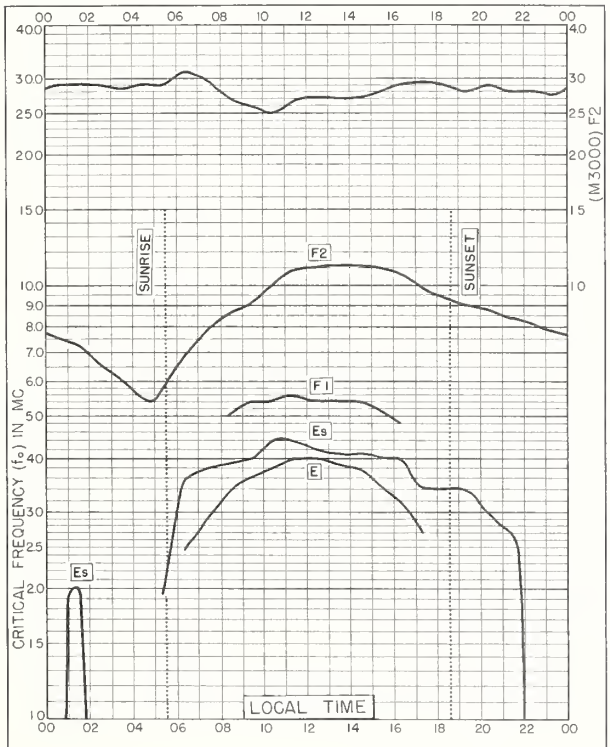


Fig. 35. EL CERILLO, MEXICO
19.3°N, 99.5°W JULY 1960

NBS 503

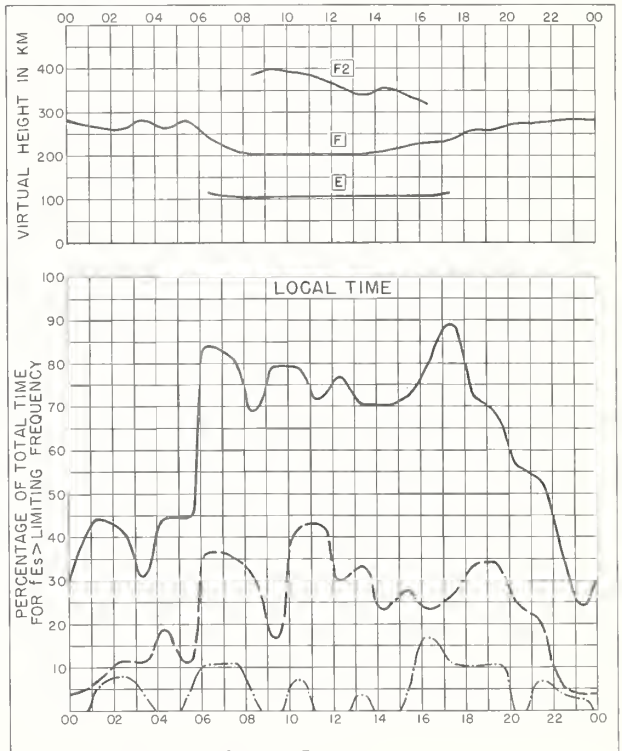


Fig. 36. EL CERILLO, MEXICO JULY 1960

NBS 490

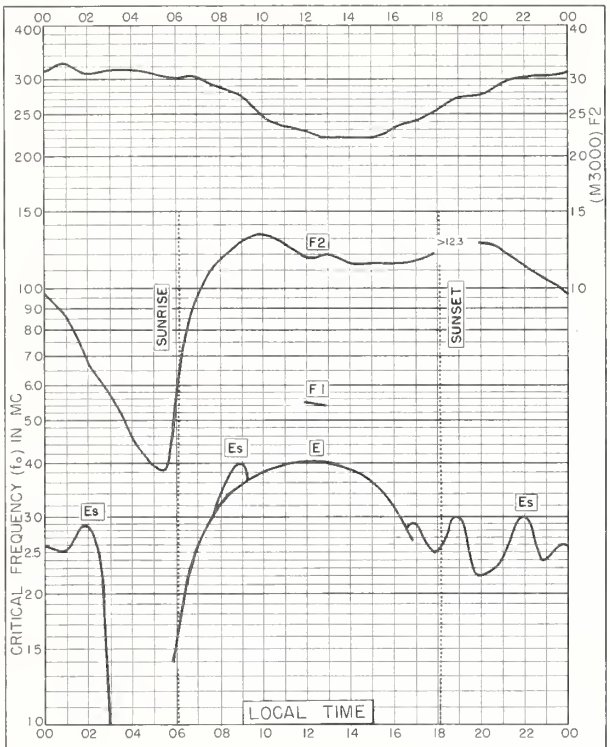


Fig. 37. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E JULY 1960

NBS 503

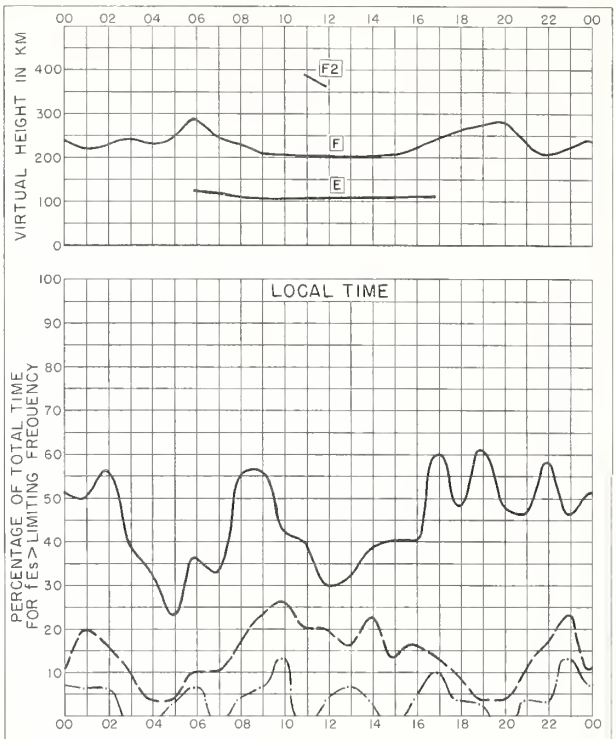


Fig. 38. SINGAPORE, BRITISH MALAYA JULY 1960

NBS 490

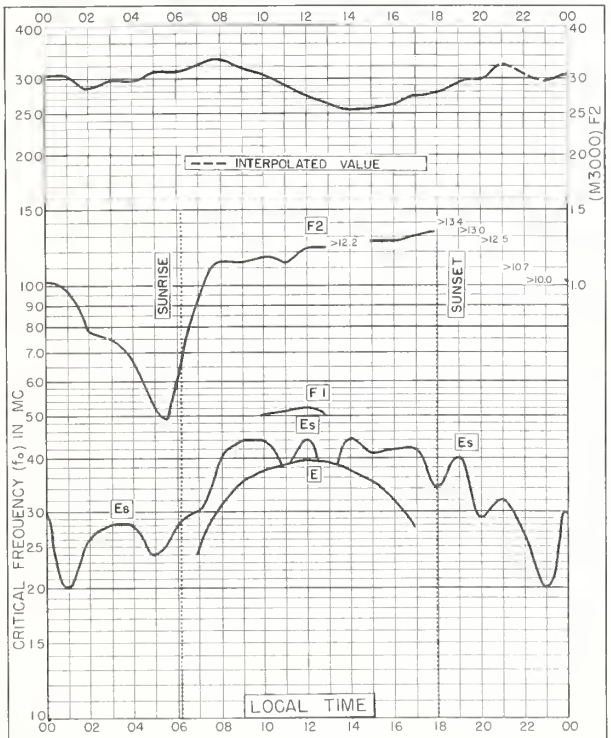


Fig. 39. LWIRO, CONGO
2.3°S, 28.8°E JULY 1960

NBS 503

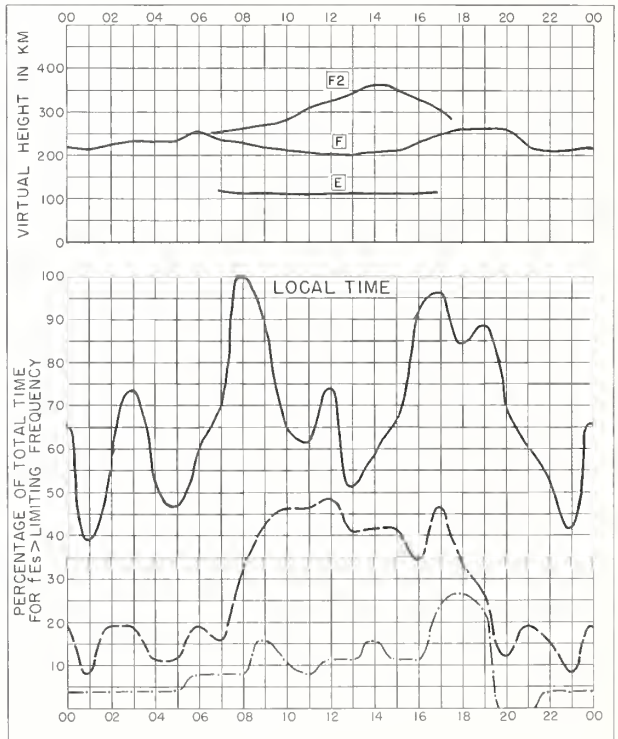


Fig. 40. LWIRO, CONGO JULY 1960

NBS 490

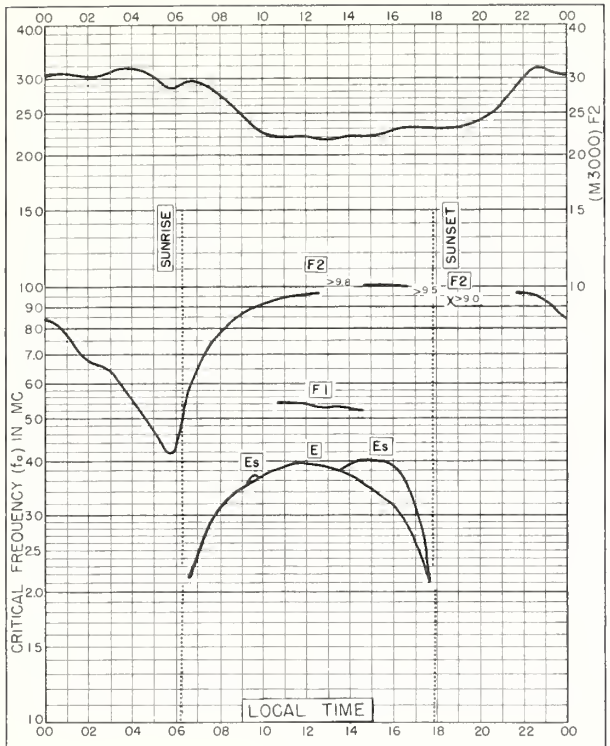


Fig. 41. TALARA, PERU
4.6°S, 81.3°W
JULY 1960

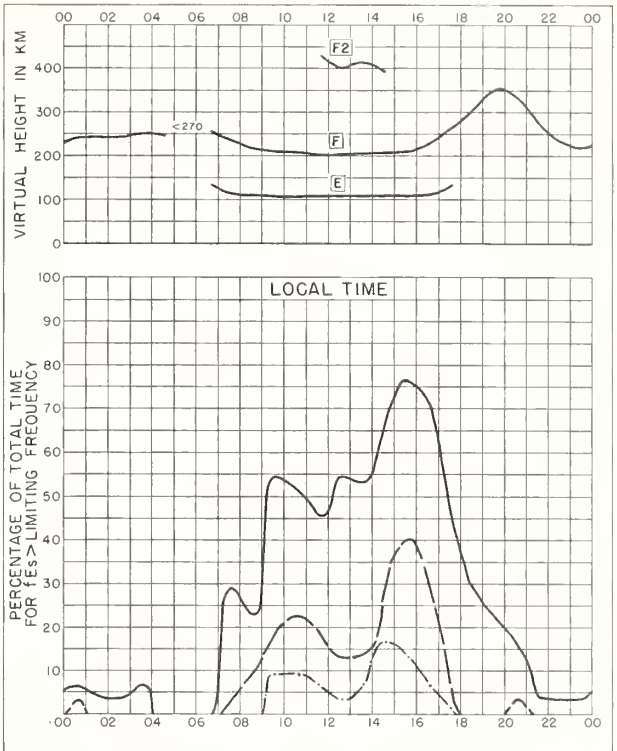


Fig. 42. TALARA, PERU
JULY 1960

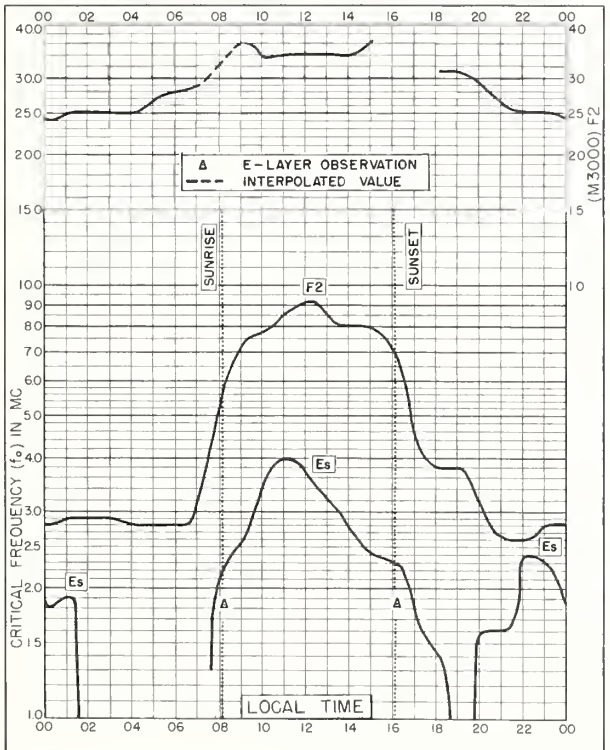


Fig. 43. FALKLAND IS.
51.7°S, 57.8°W
JULY 1960

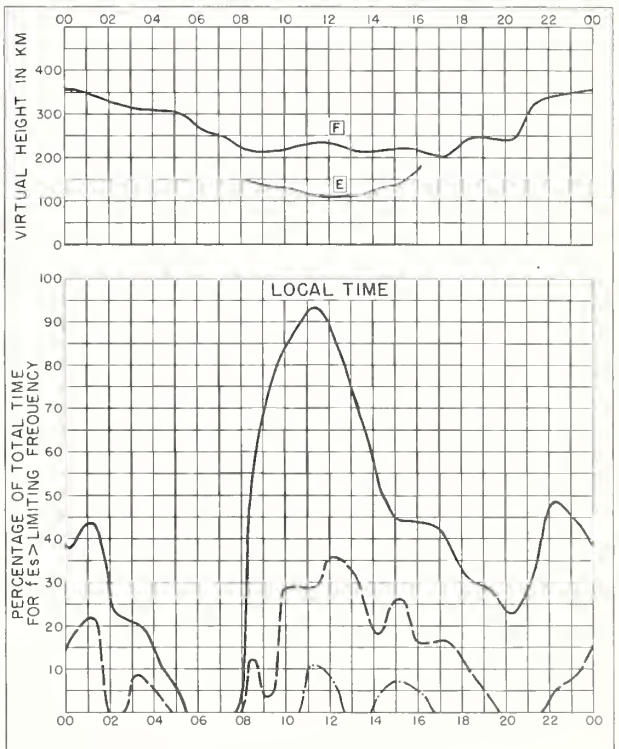


Fig. 44. FALKLAND IS.
JULY 1960

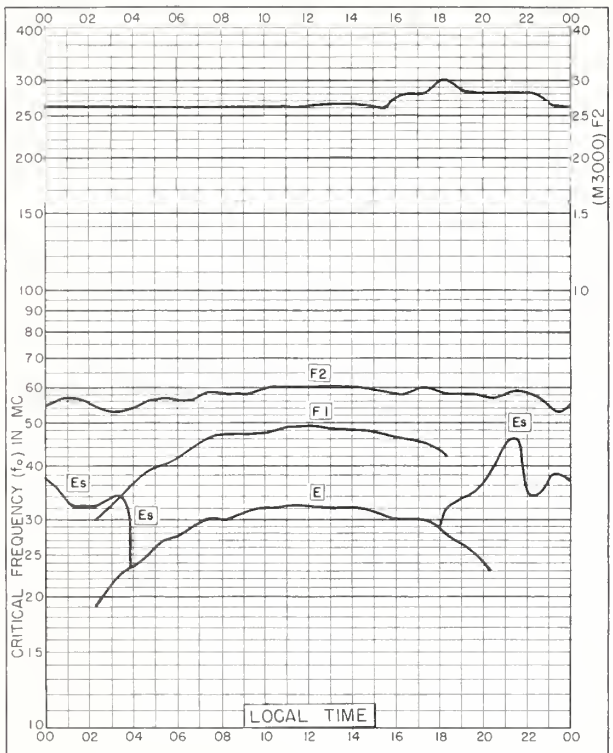


Fig. 45. KIRUNA, SWEDEN
67.8°N, 20.3°E JUNE 1960

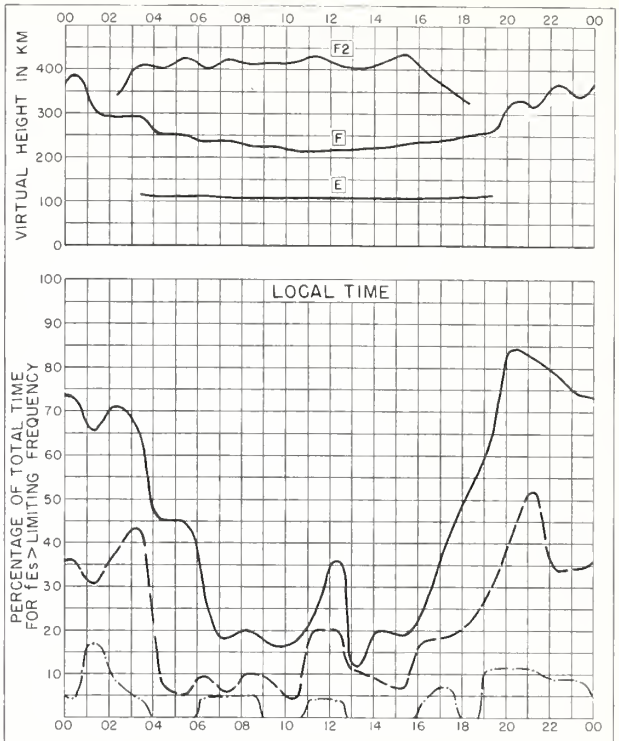


Fig. 46. KIRUNA, SWEDEN JUNE 1960

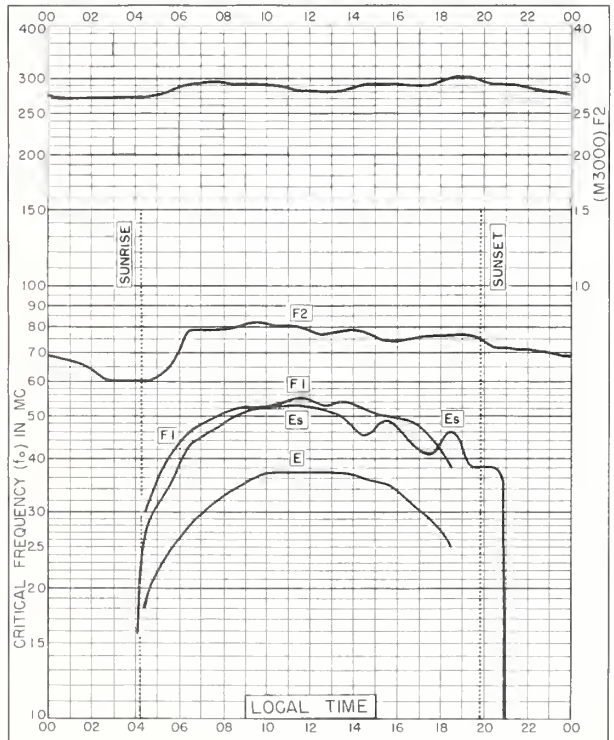


Fig. 47. SOTTENS, SWITZERLAND
46.6°N, 6.7°E JUNE 1960

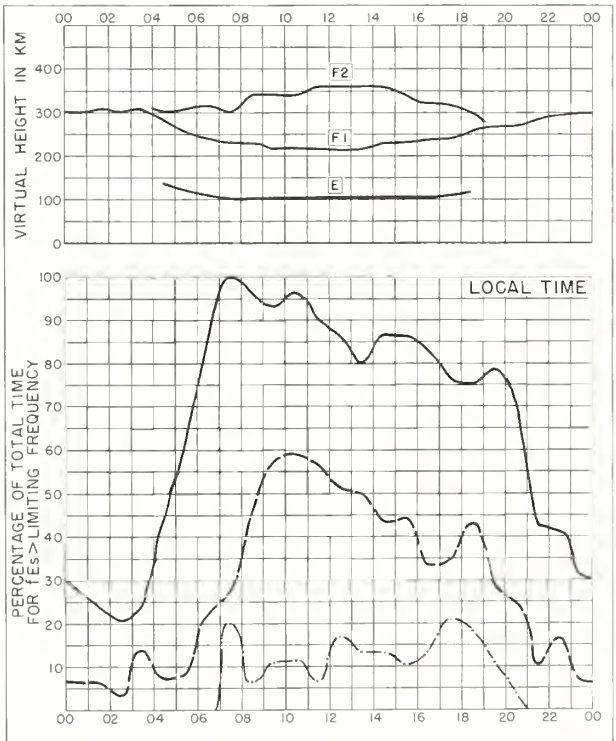


Fig. 48. SOTTENS, SWITZERLAND JUNE 1960

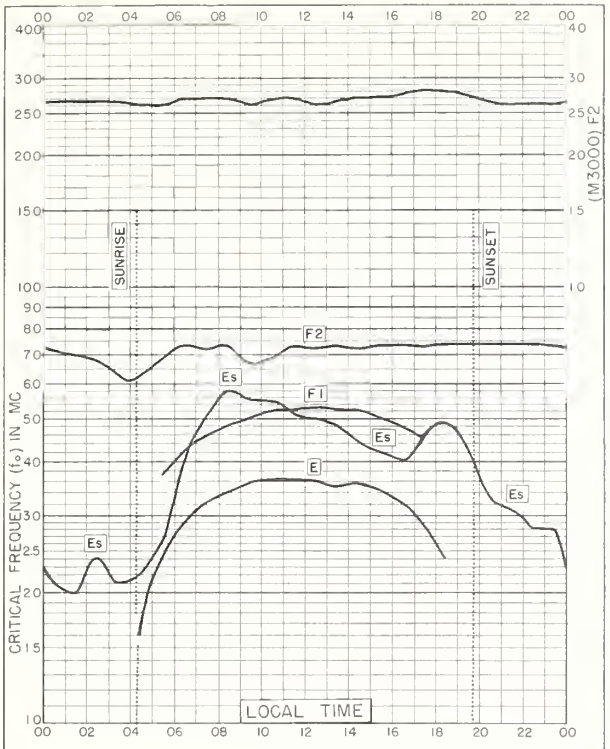


Fig. 49. WAKKANAI, JAPAN
45.4°N, 141.7°E JUNE 1960

NBS 503

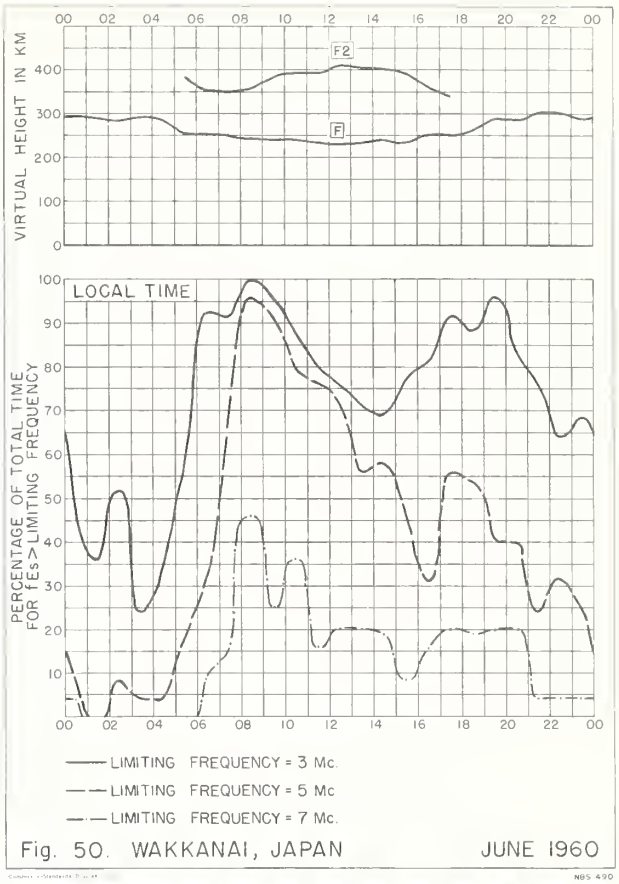


Fig. 50. WAKKANAI, JAPAN JUNE 1960

NBS 490

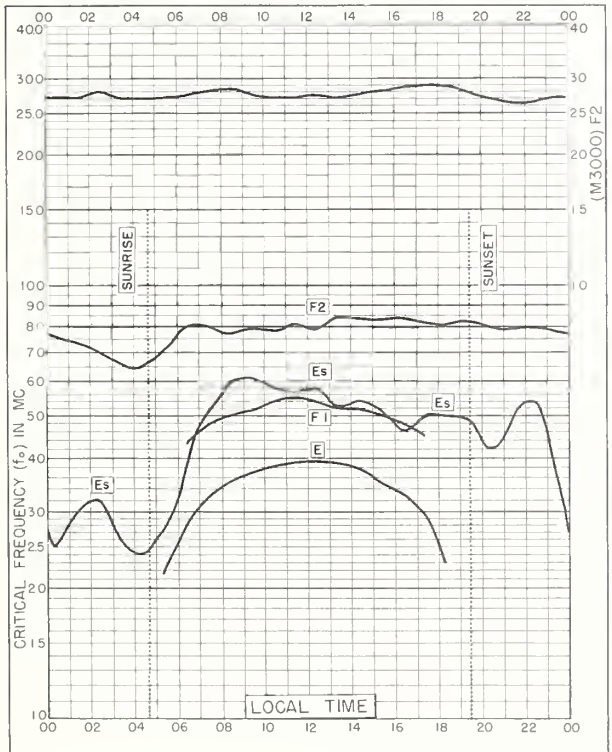


Fig. 51. AKITA, JAPAN
39.7°N, 140.1°E JUNE 1960

NBS 503

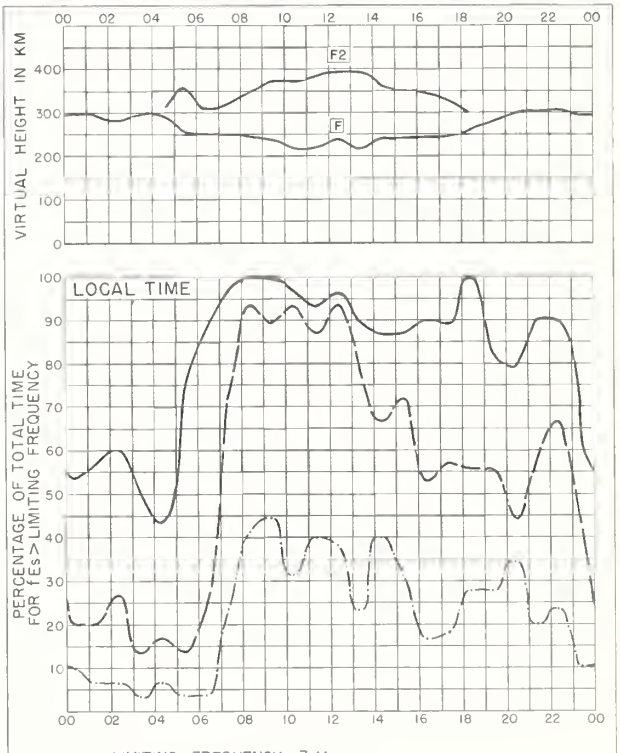


Fig. 52. AKITA, JAPAN JUNE 1960

NBS 490

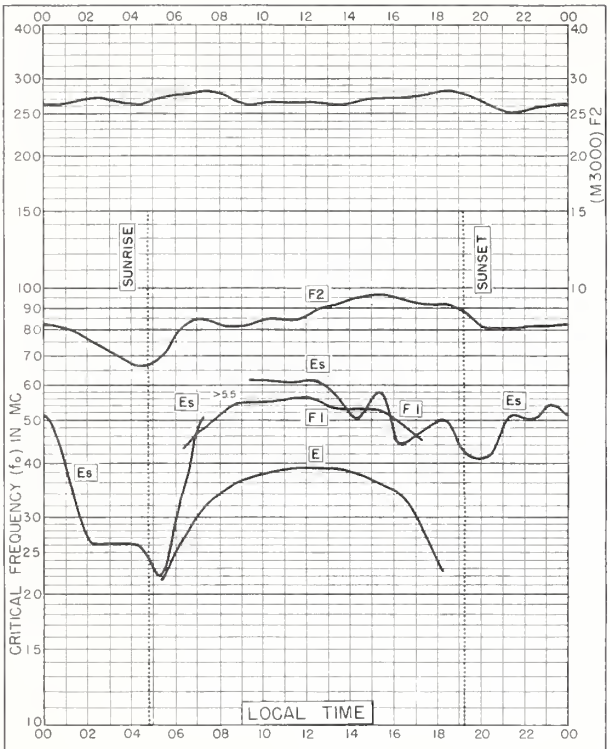


Fig. 53. TOKYO, JAPAN
35.7°N, 139.5°E JUNE 1960

NBS 503

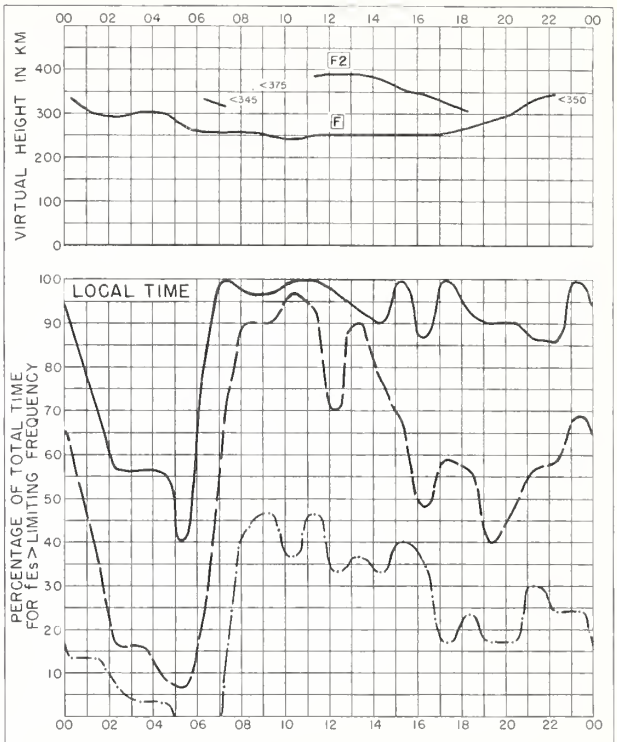


Fig. 54. TOKYO, JAPAN JUNE 1960

NBS 490

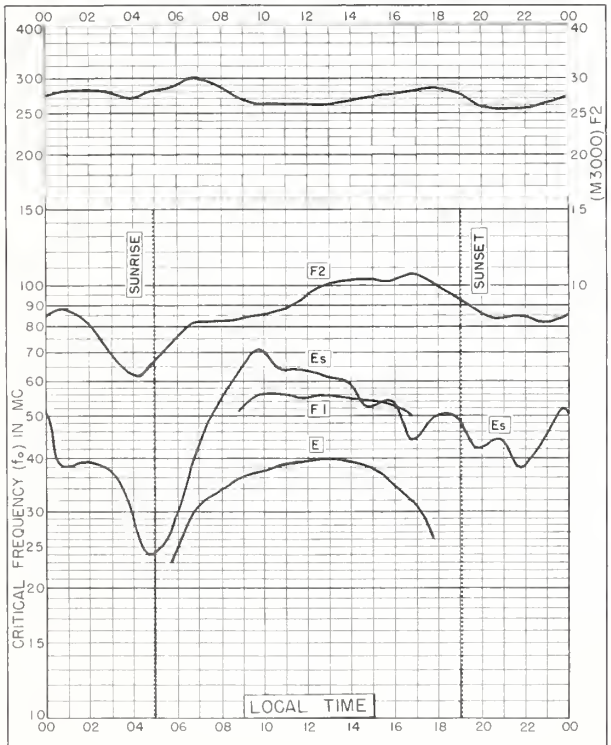


Fig. 55. YAMAGAWA, JAPAN
31.2°N, 130.6°E JUNE 1960

NBS 503

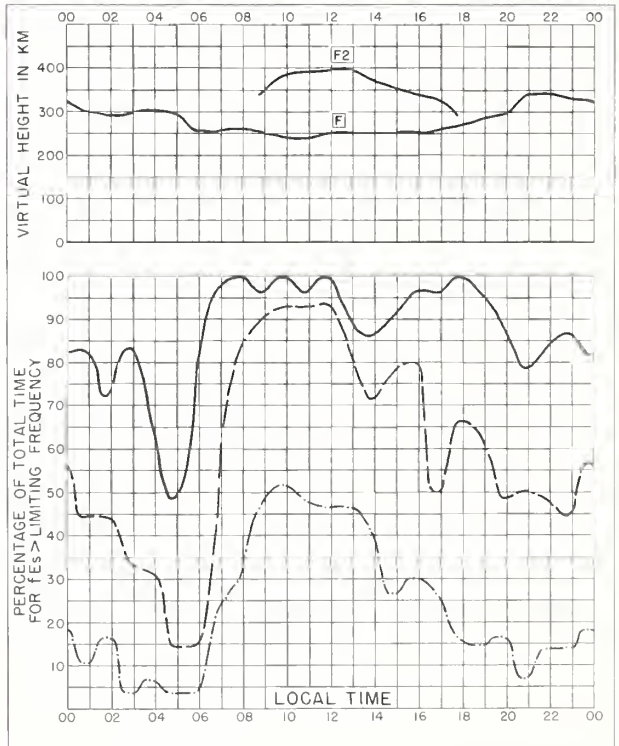


Fig. 56. YAMAGAWA, JAPAN JUNE 1960

NBS 490

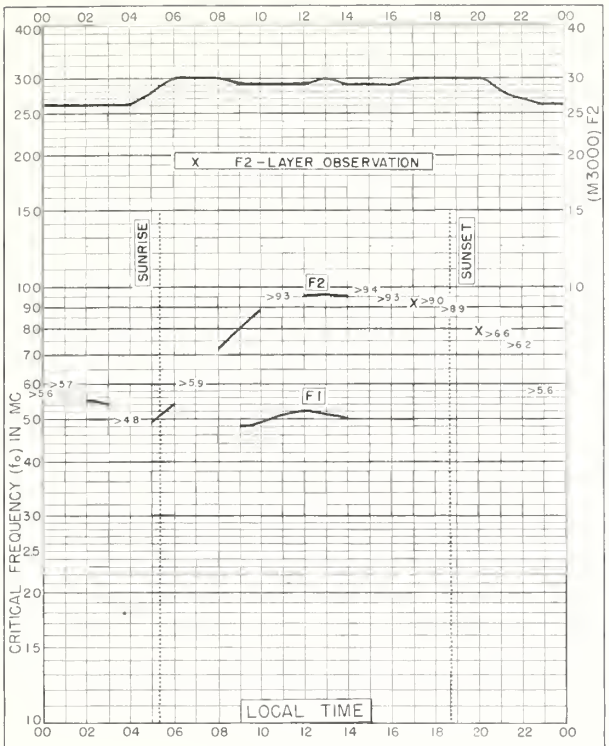


Fig. 57. GRAZ, AUSTRIA
47.1°N, 15.5°E APRIL 1960

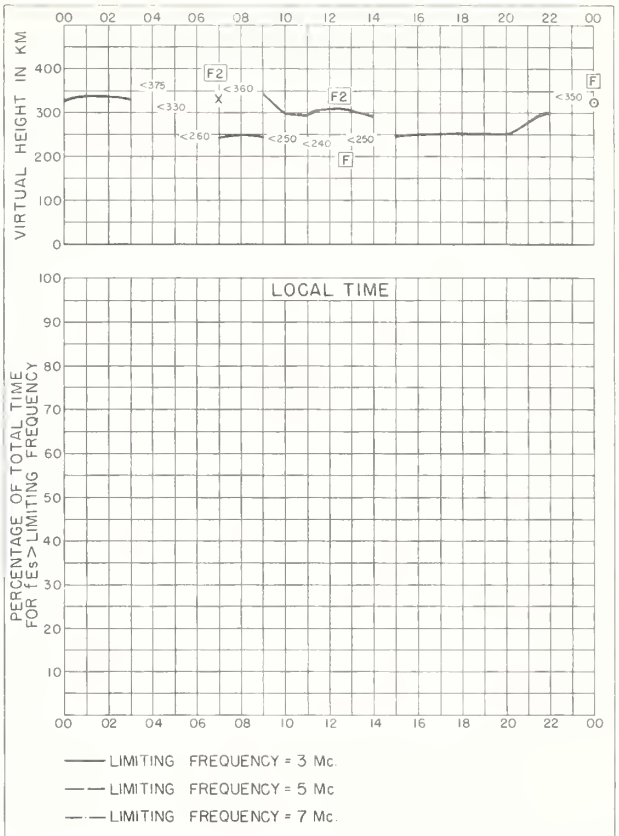


Fig. 58. GRAZ, AUSTRIA APRIL 1960

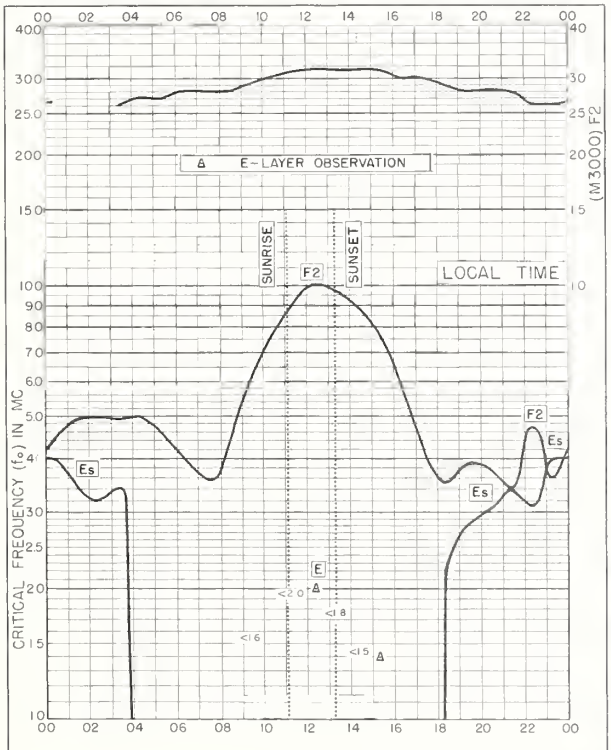


Fig. 59. KIRUNA, SWEDEN
67.8°N, 20.3°E JANUARY 1960

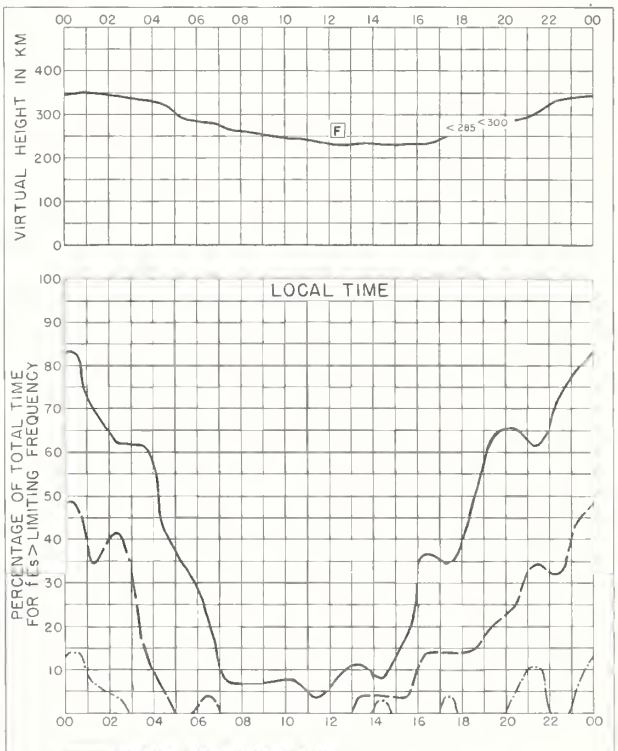


Fig. 60. KIRUNA, SWEDEN JANUARY 1960

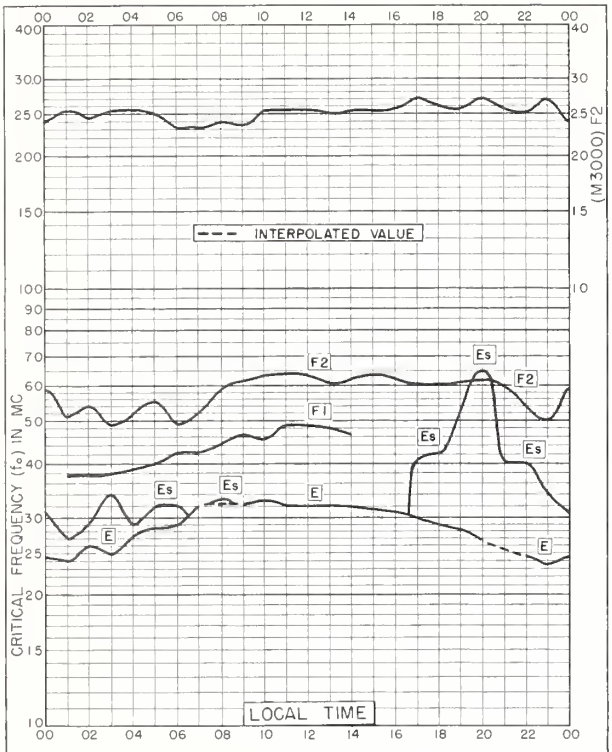


Fig. 61. SVALBARD, NORWAY
78.2°N, 15.7°E JULY 1959

NBS 503

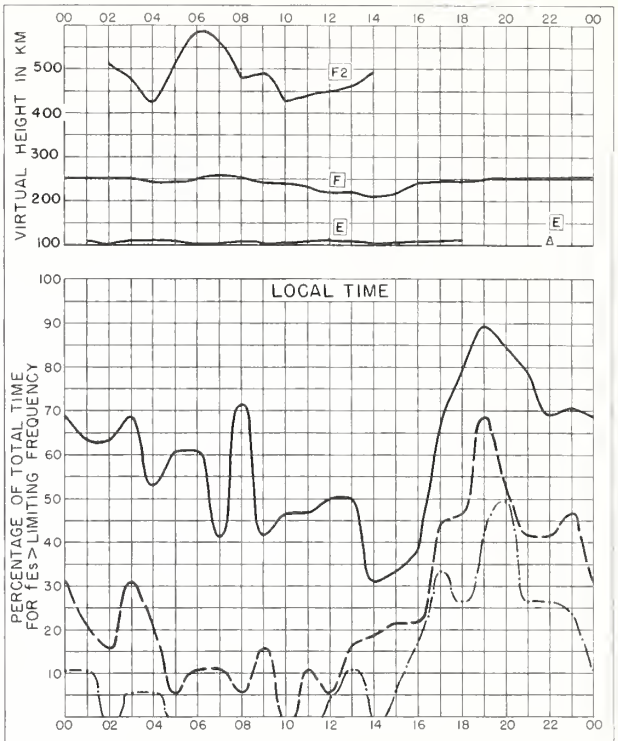


Fig. 62. SVALBARD, NORWAY JULY 1959

NBS 490

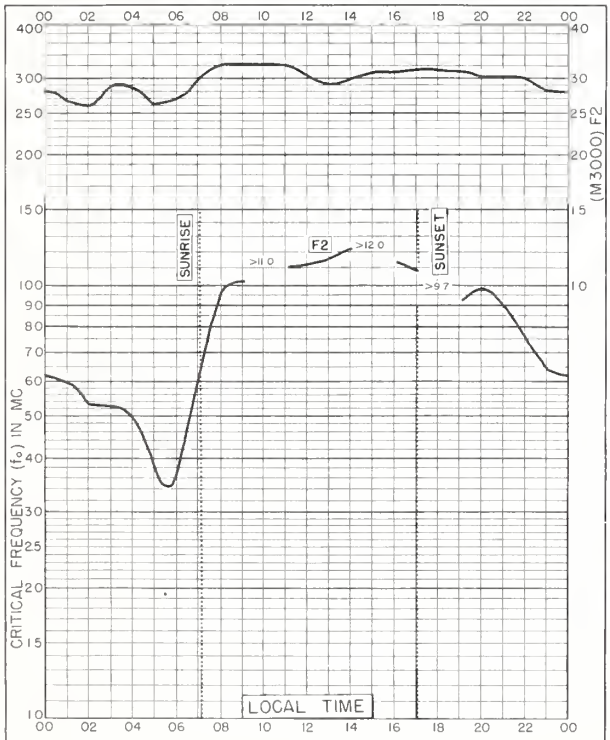


Fig. 63. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W JULY 1959

NBS 503

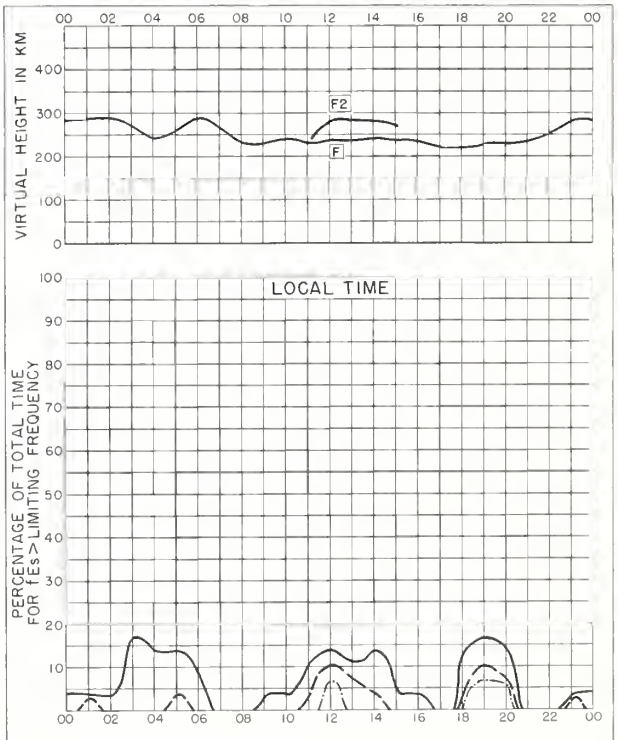


Fig. 64. BUENOS AIRES, ARGENTINA JULY 1959

NBS 490

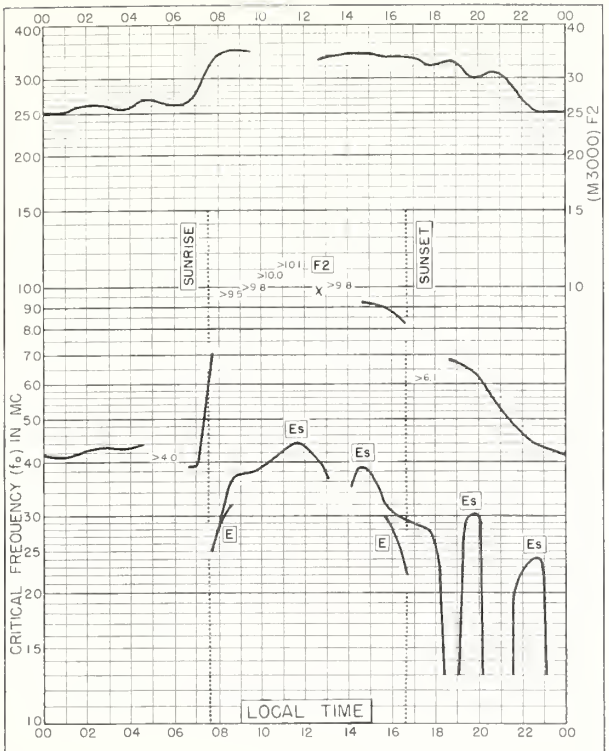


Fig. 65. TRELEW, ARGENTINA
43.2°S, 65.3°W JULY 1959

NBS 503

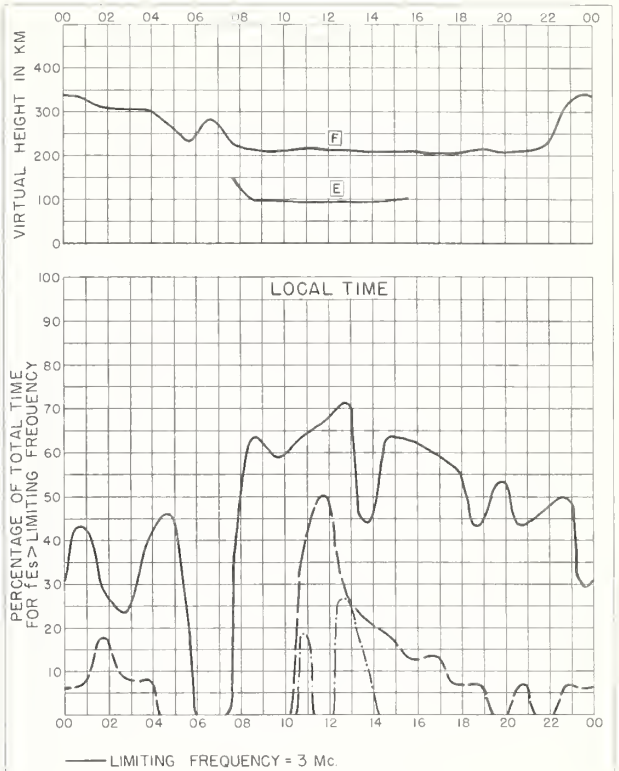


Fig. 66. TRELEW, ARGENTINA JULY 1959

NBS 490

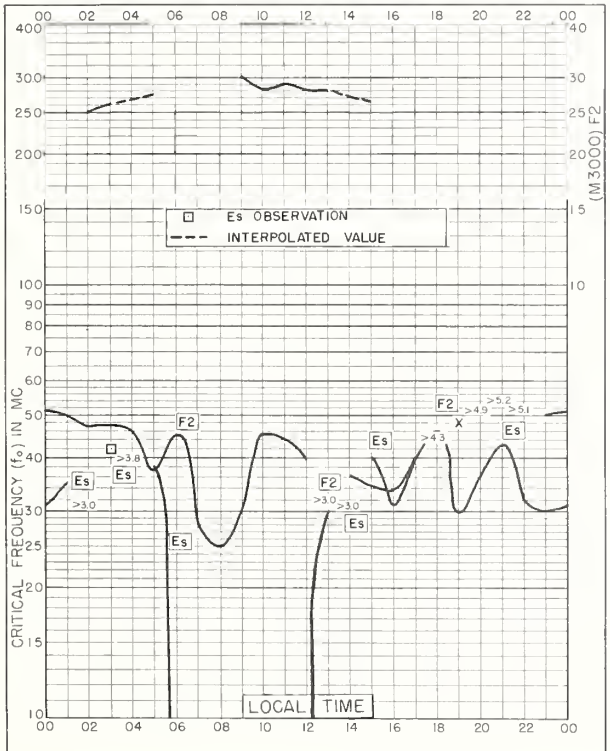


Fig. 67. BYRD STATION
80.0°S, 120.0°W JULY 1959

NBS 503

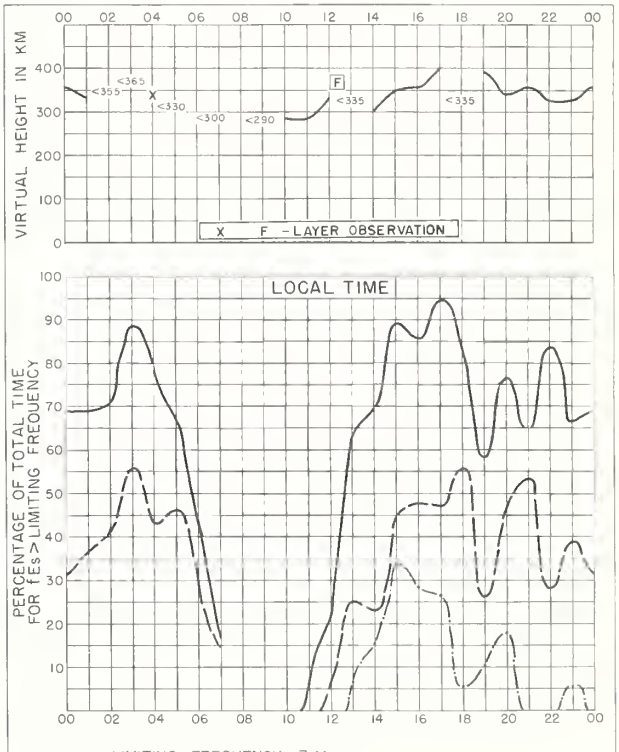


Fig. 68. BYRD STATION JULY 1959

NBS 490

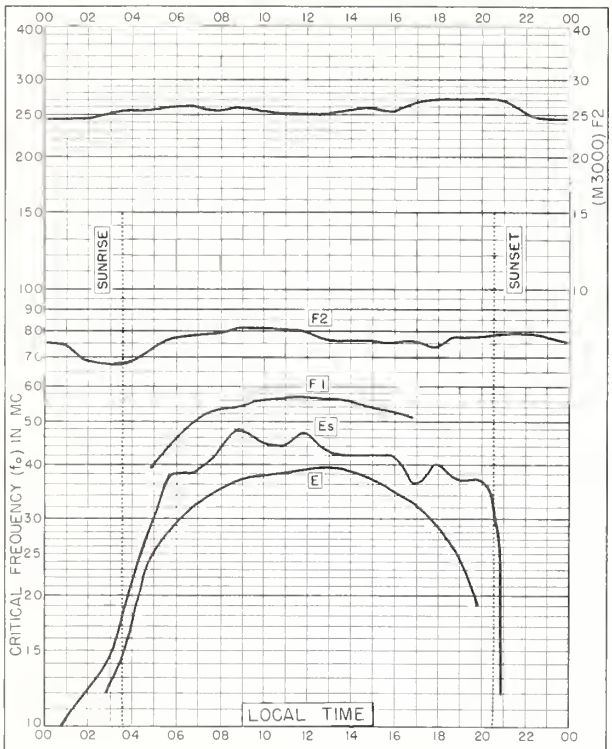


Fig. 69. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E JUNE 1959

NBS 503

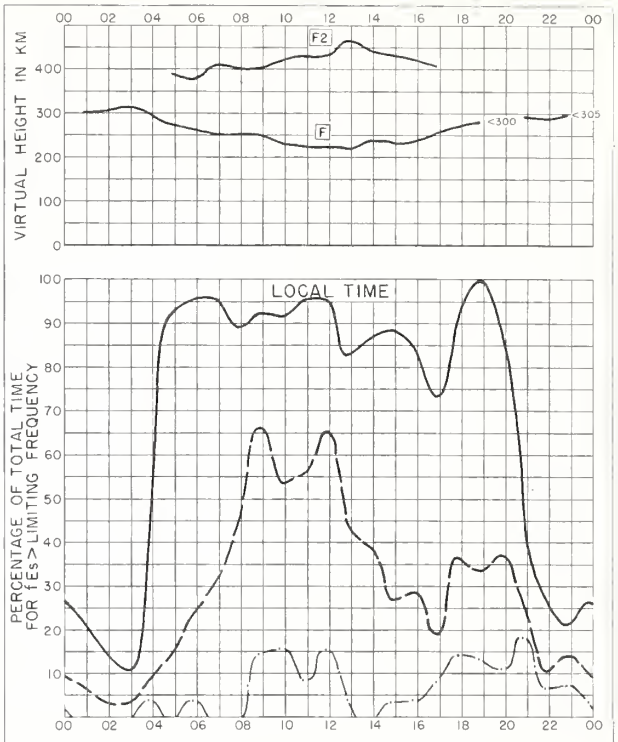


Fig. 70. JULIUSRUH/RÜGEN, GERMANY JUNE 1959

NBS 490

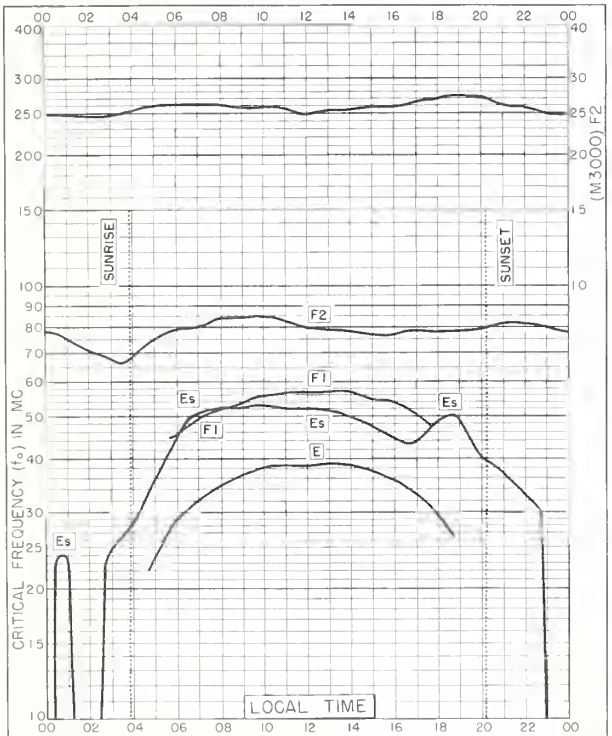


Fig. 71. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E JUNE 1959

NBS 503

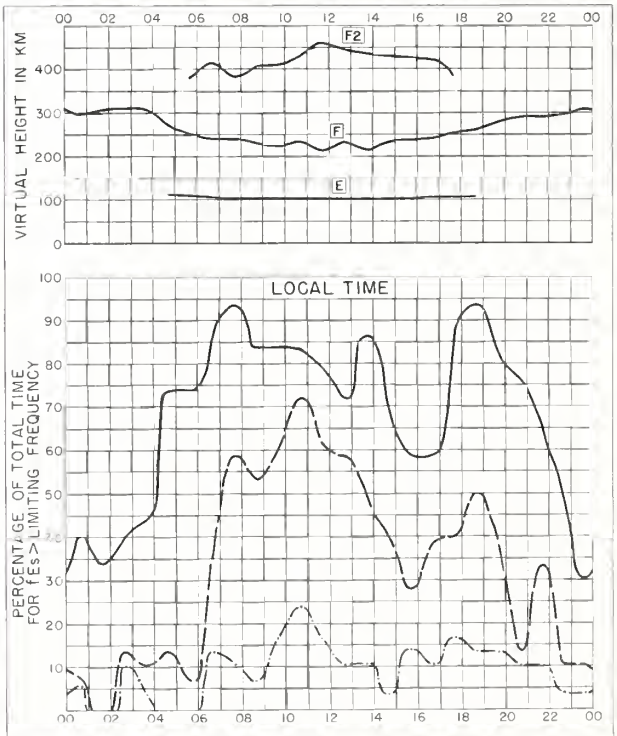


Fig. 72. LINDAU/HARZ, GERMANY JUNE 1959

NBS 490

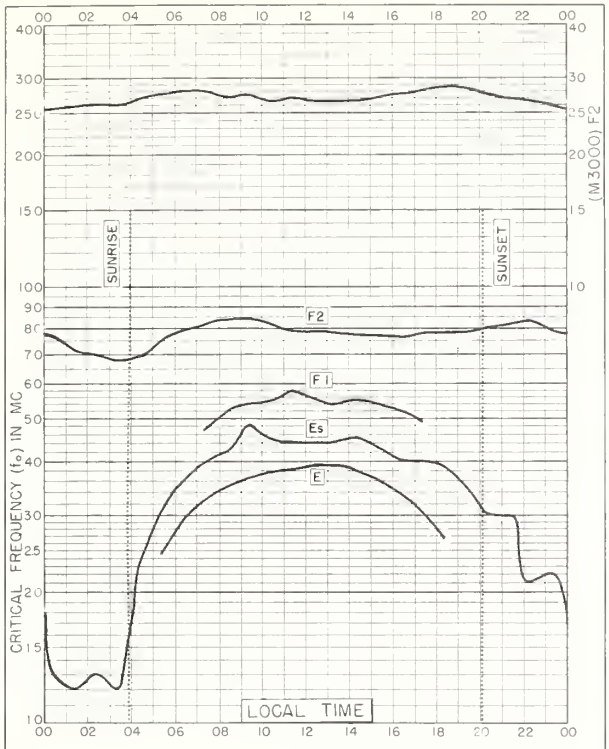


Fig. 73. DOURBES, BELGIUM
50.1°N, 4.6°E JUNE 1959

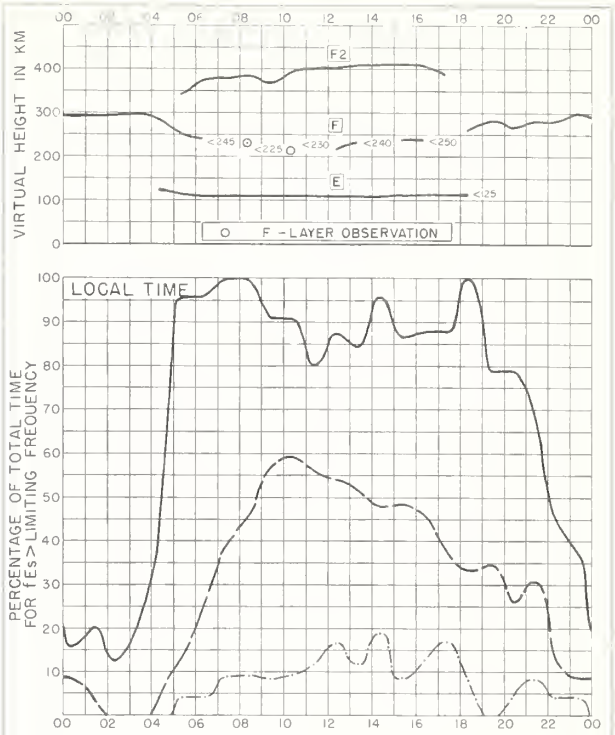


Fig. 74. DOURBES, BELGIUM JUNE 1959

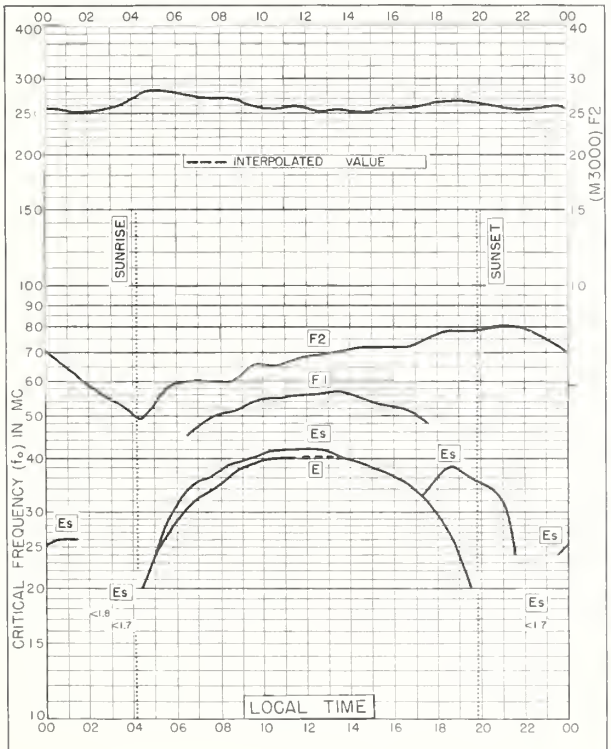


Fig. 75. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JUNE 1959

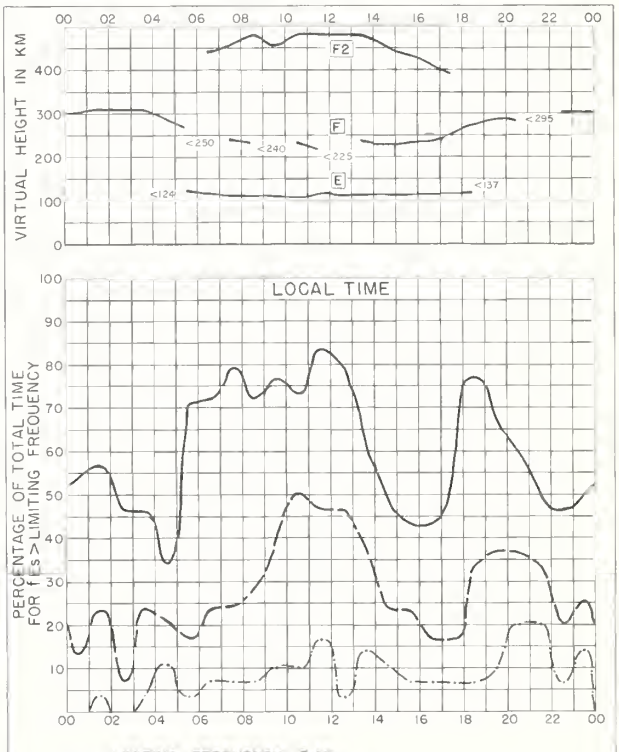


Fig 76. ST. JOHN'S, NEWFOUNDLAND JUNE 1959

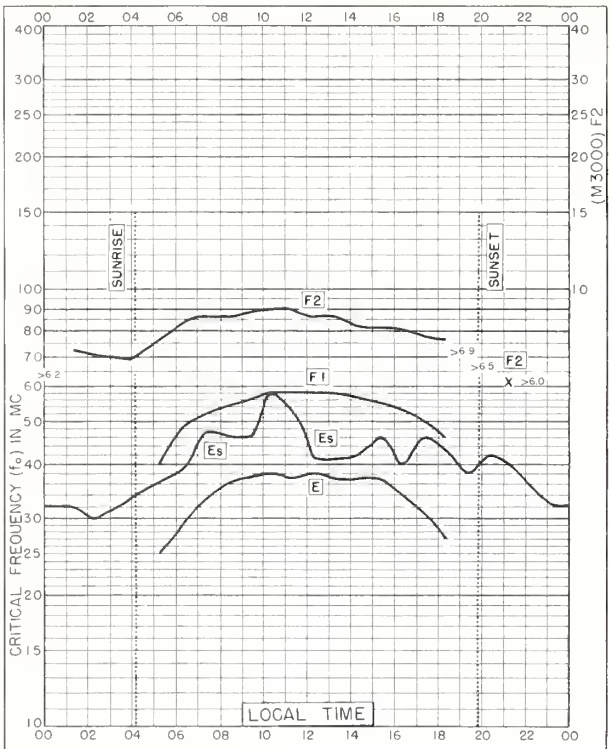


Fig. 77. BUDAPEST, HUNGARY
47.4°N, 19.2°E JUNE 1959

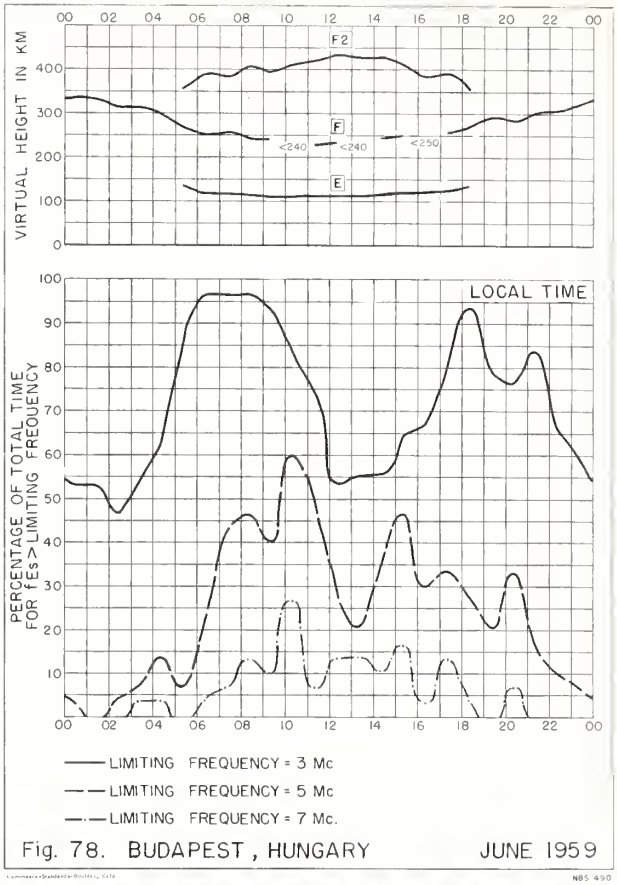


Fig. 78. BUDAPEST, HUNGARY JUNE 1959

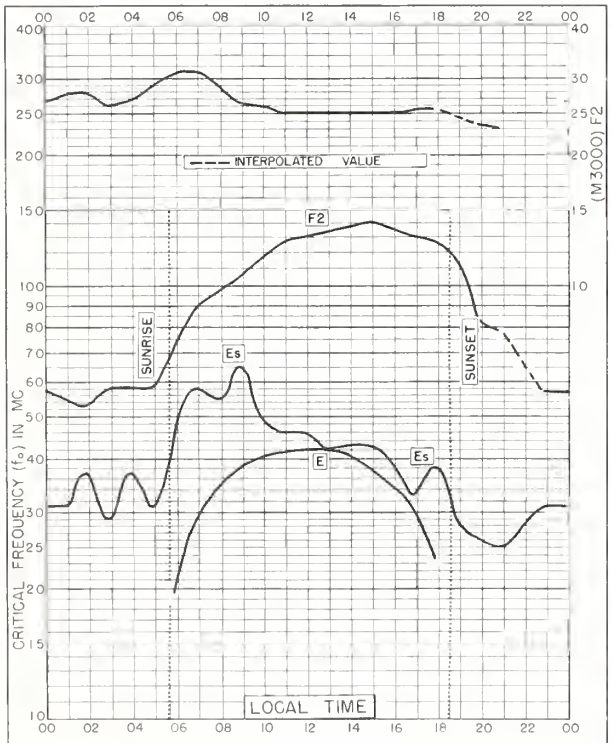


Fig. 79. DAKAR, FRENCH W. AFRICA
14.8°N, 17.4°W JUNE 1959

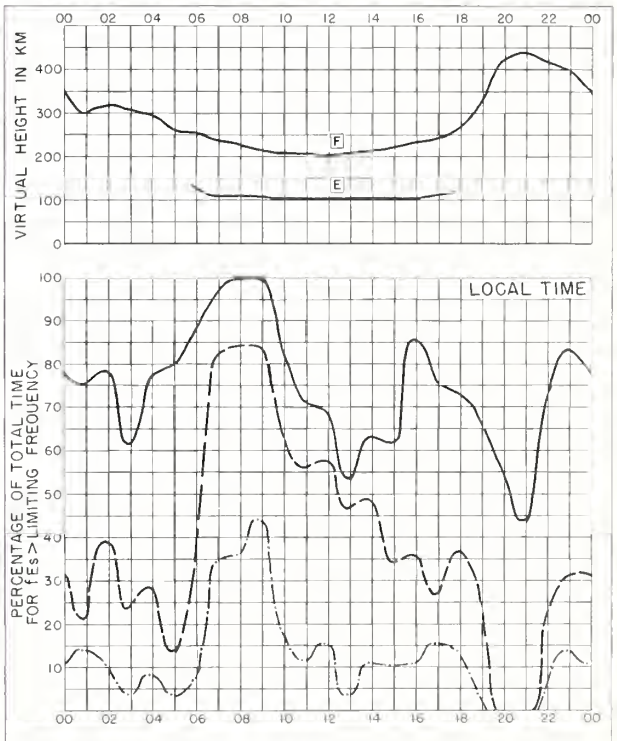


Fig. 80. DAKAR, FRENCH W. AFRICA JUNE 1959

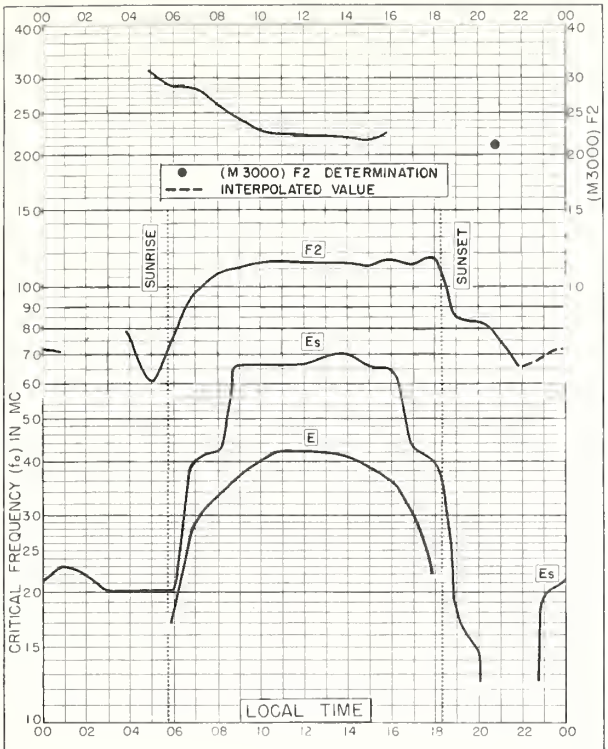


Fig. 81. DJIBOUTI, FRENCH SOMALILAND
11.6°N, 43.2° E JUNE 1959

NBS 503

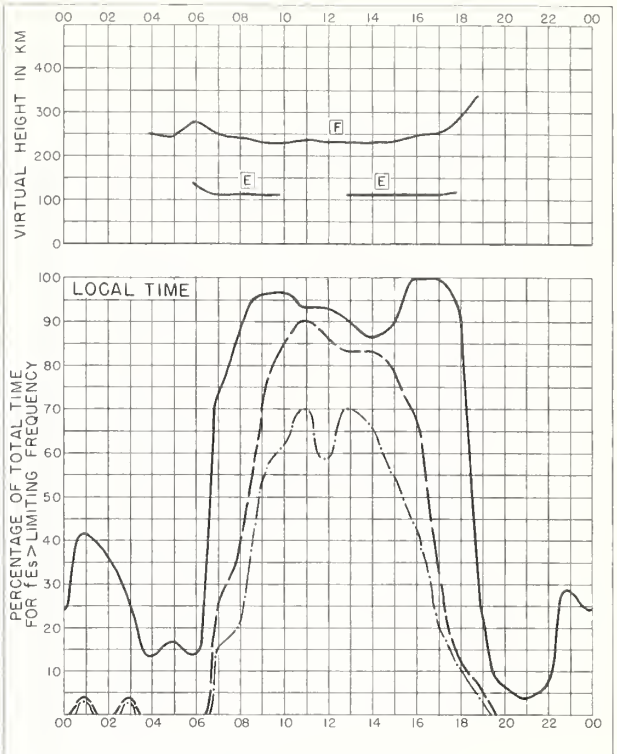


Fig. 82. DJIBOUTI, FRENCH SOMALILAND JUNE 1959

NBS 490

Fig. 83. TAHITI, SOCIETY IS.
17.7°S, 149.3°W JUNE 1959

NBS 503

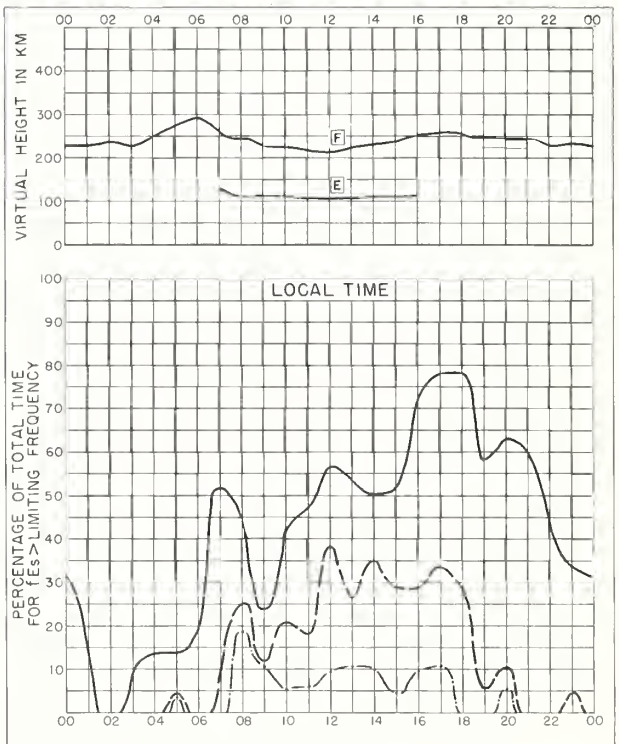


Fig. 84. TAHITI, SOCIETY IS. JUNE 1959

NBS 490

Fig. 85. TANANARIVE, MADAGASCAR
18.8°S, 47.5°E JUNE 1959

NBS 503

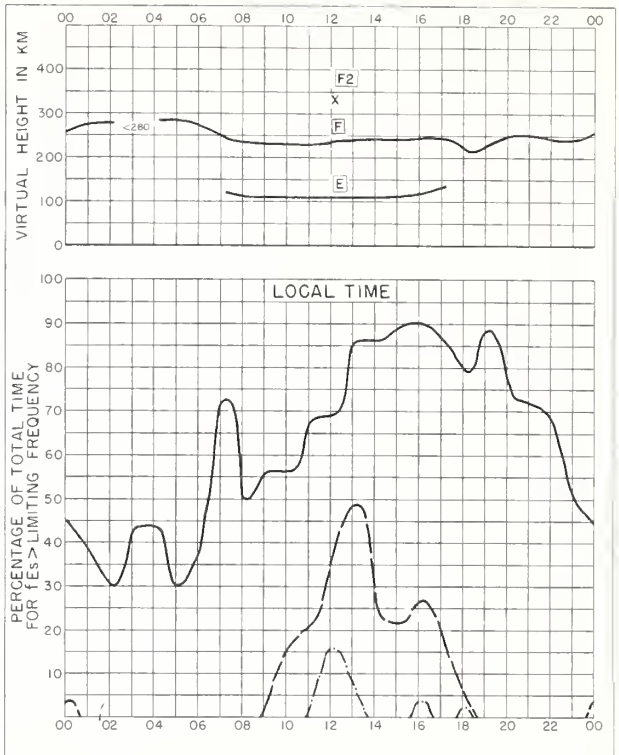


Fig. 86. TANANARIVE, MADAGASCAR JUNE 1959

NBS 490

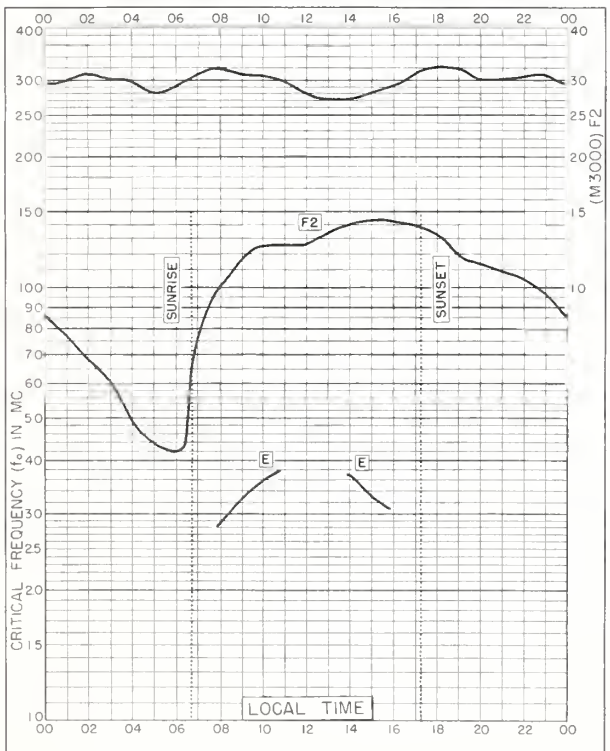


Fig. 87. SAO PAULO, BRAZIL
23.5°S, 46.5°W JUNE 1959

NBS 503

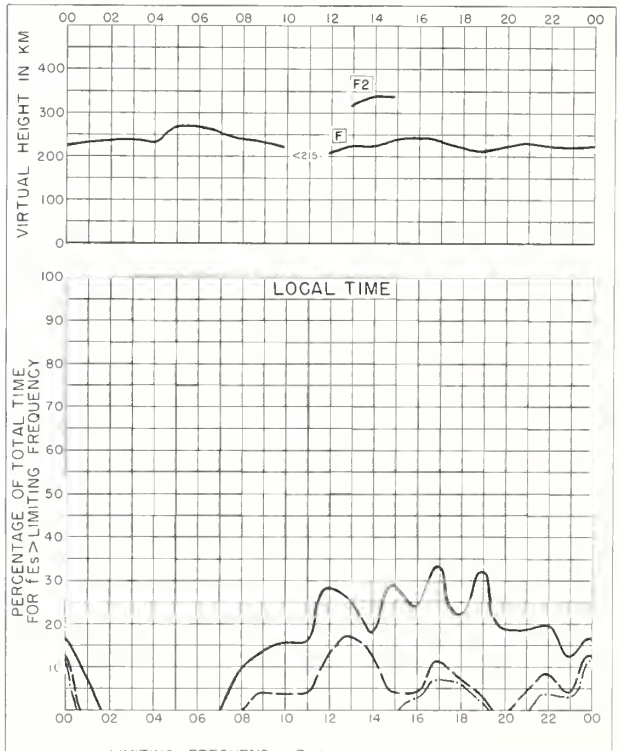


Fig. 88. SAO PAULO, BRAZIL JUNE 1959

NBS 490

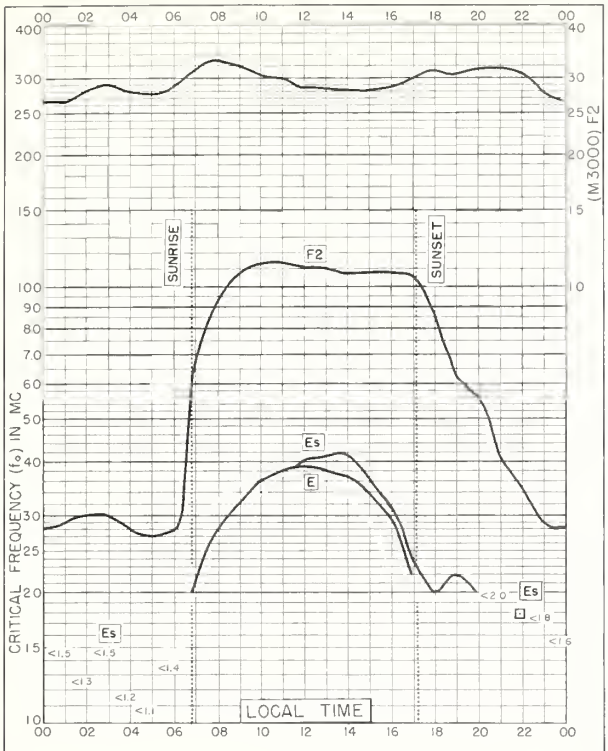
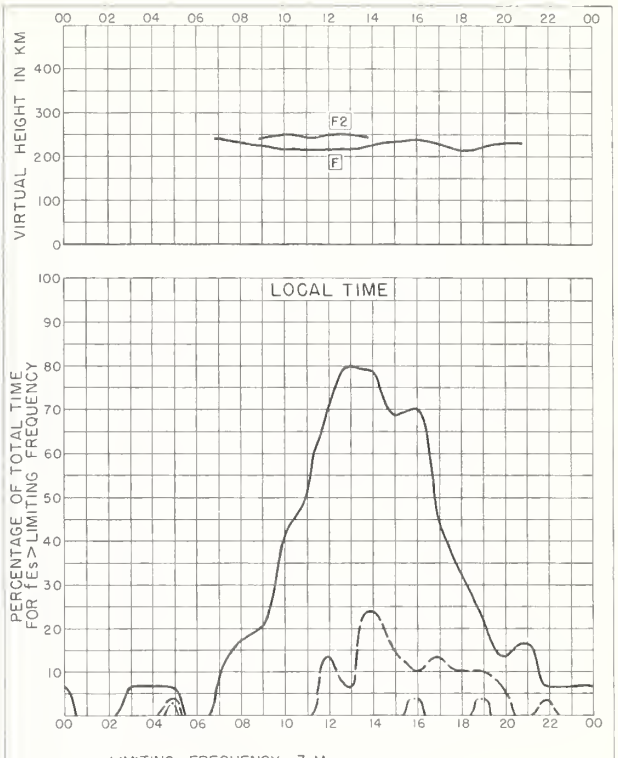


Fig. 89. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E JUNE 1959



JUNE 1959

Fig. 90. JOHANNESBURG, UNION OF S. AFRICA

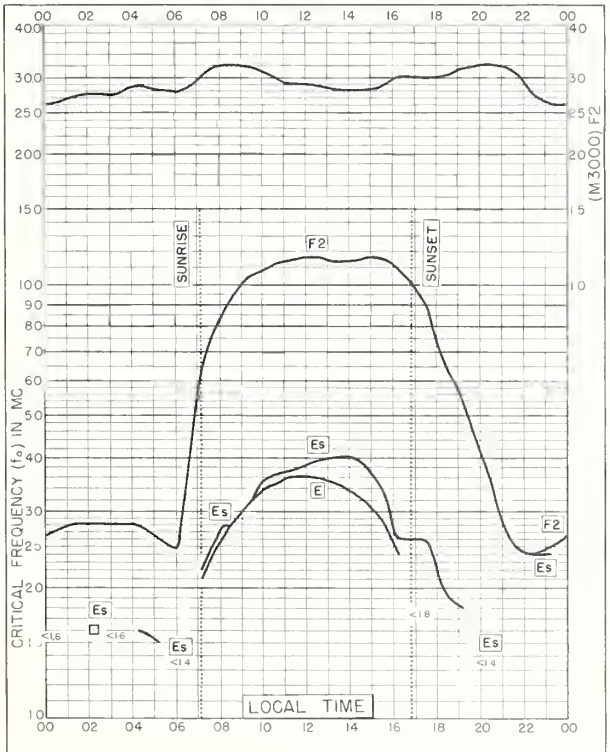
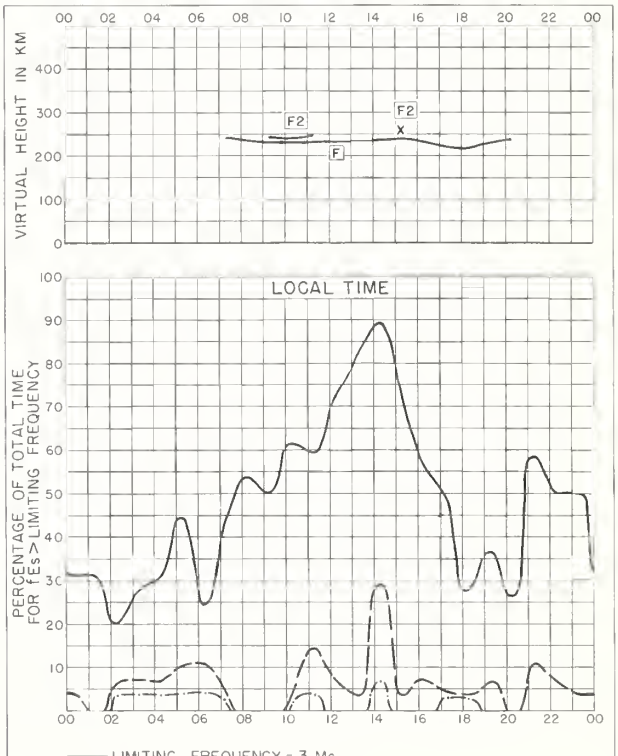


Fig. 91. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E JUNE 1959



JUNE 1959

Fig. 92. CAPETOWN, UNION OF S. AFRICA

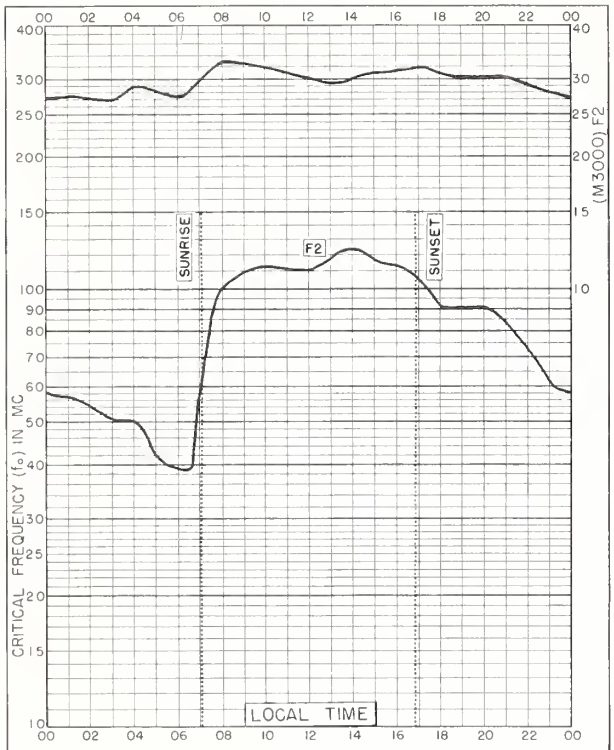


Fig. 93. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W JUNE 1959

NBS 503

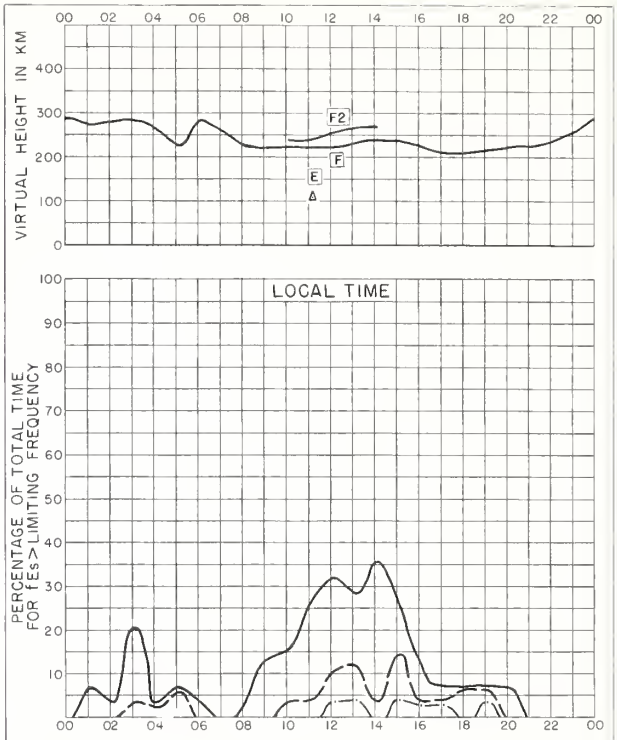


Fig. 94. BUENOS AIRES, ARGENTINA JUNE 1959

NBS 490

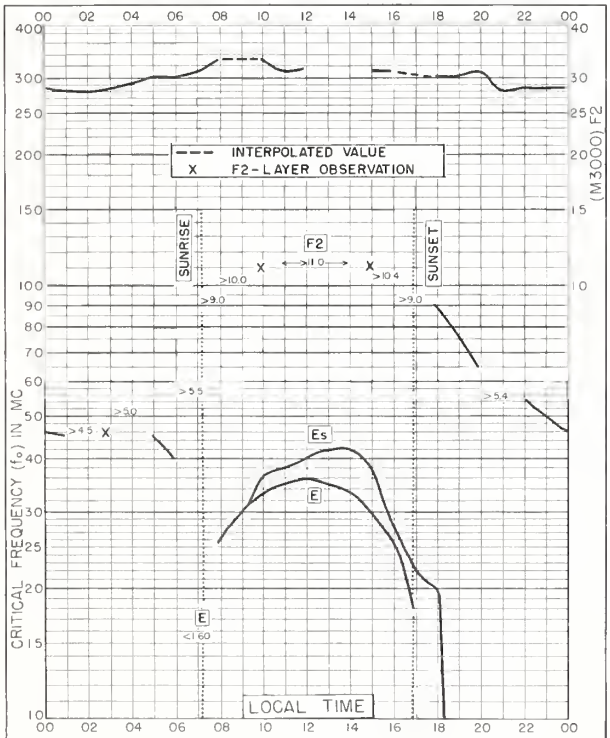


Fig. 95. CANBERRA, AUSTRALIA
35.3°S, 149.0°E JUNE 1959

NBS 503

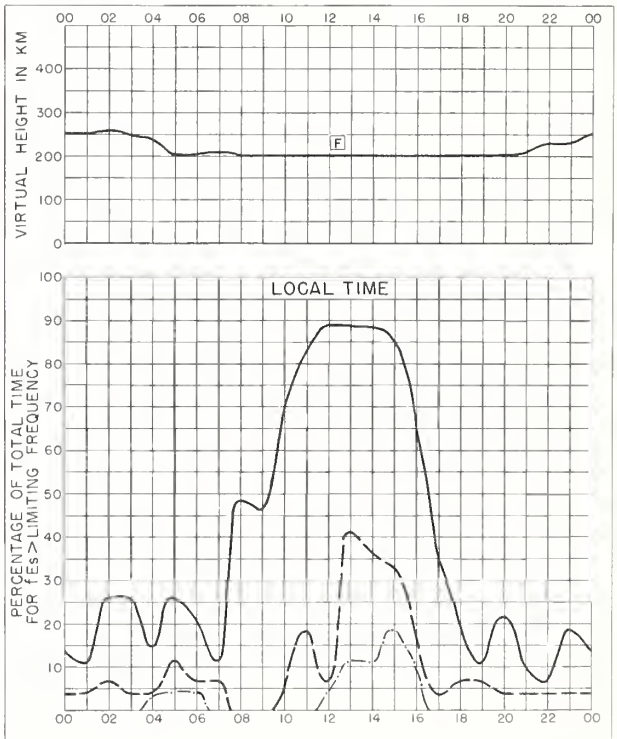


Fig. 96. CANBERRA, AUSTRALIA JUNE 1959

NBS 490

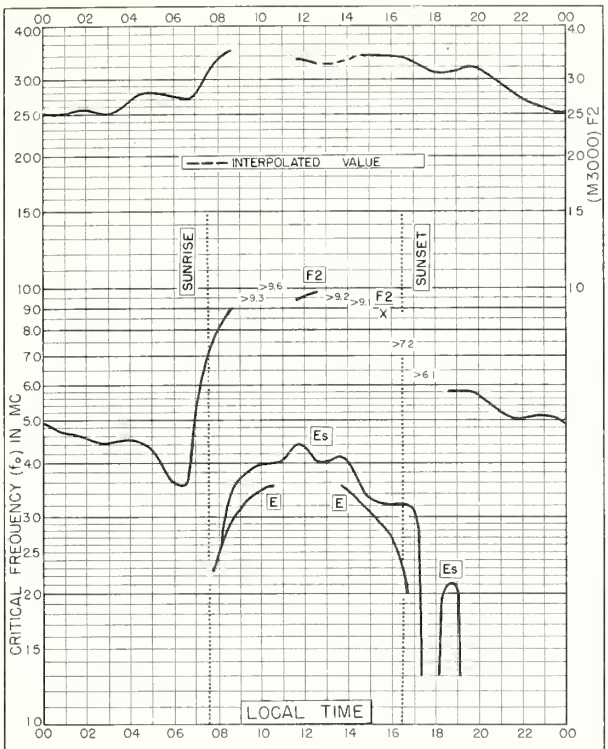


Fig. 97. TRELEW, ARGENTINA
43.2°S, 65.3°W JUNE 1959

NBS 503

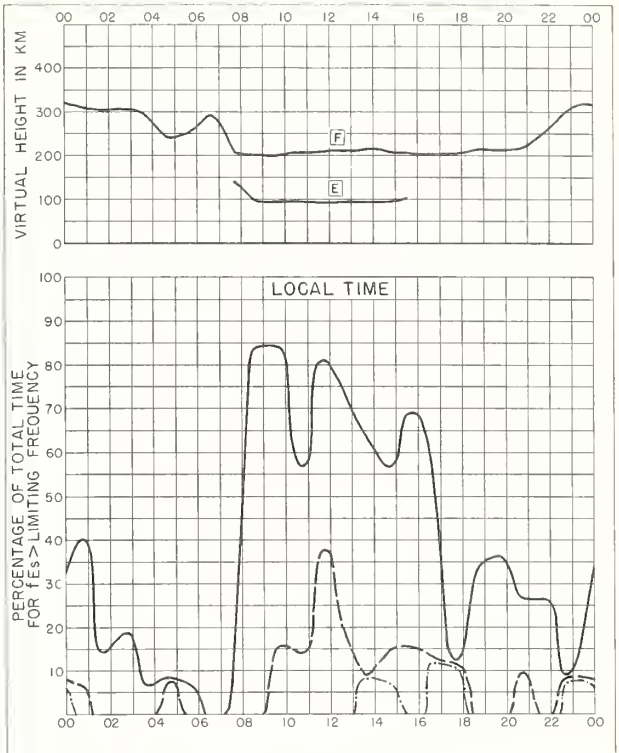


Fig. 98. TRELEW, ARGENTINA JUNE 1959

NBS 490

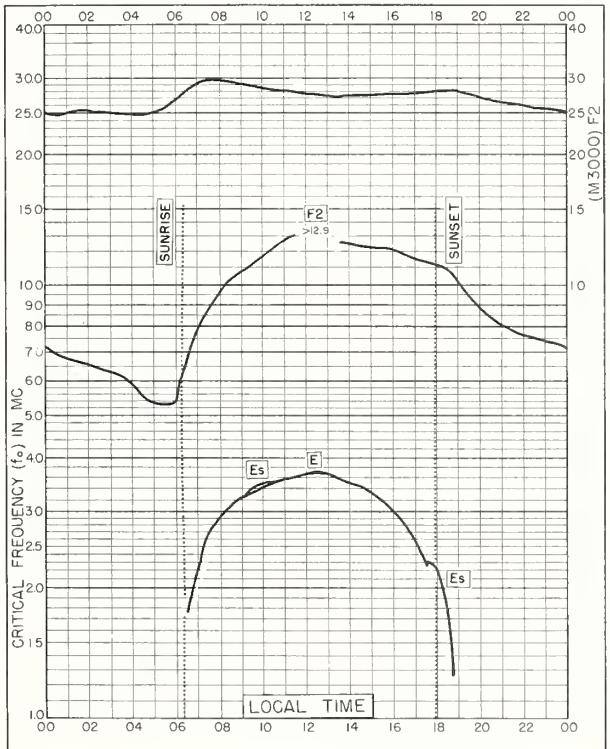


Fig. 99. FREIBURG, GERMANY
48.1°N, 7.6°E MARCH 1959

NBS 503

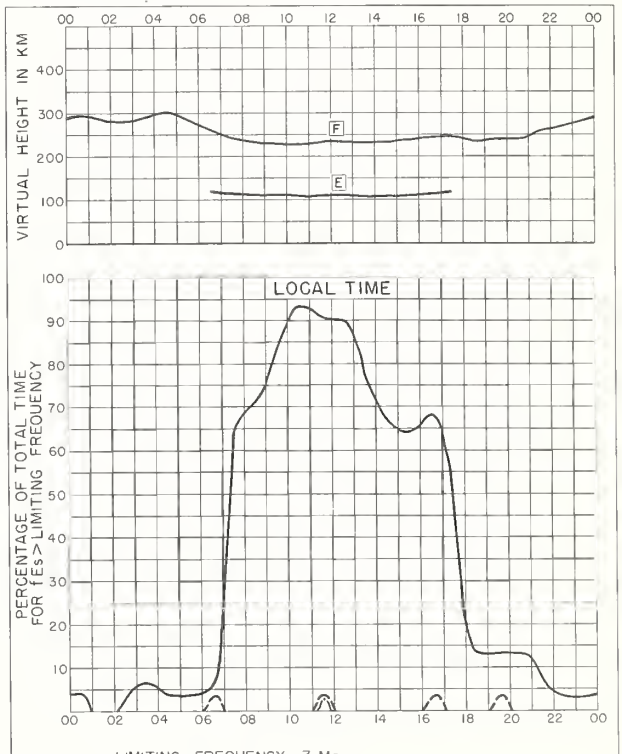


Fig. 100. FREIBURG, GERMANY MARCH 1959

NBS 490

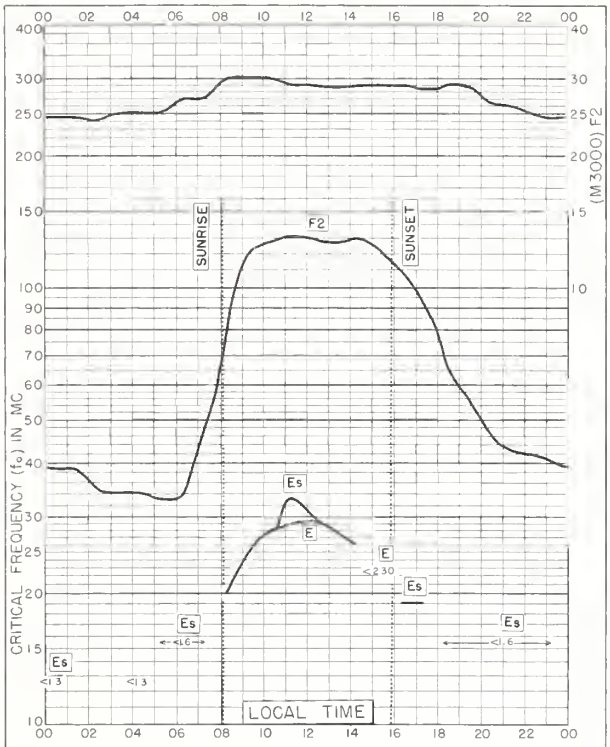


Fig. 101. DOURBES, BELGIUM
50.1°N, 4.6°E DECEMBER 1958

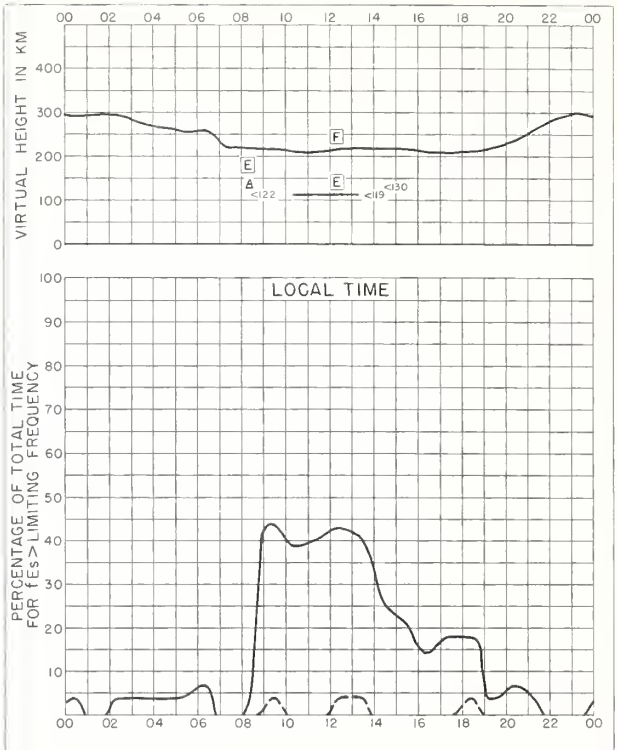


Fig. 102. DOURBES, BELGIUM DECEMBER 1958

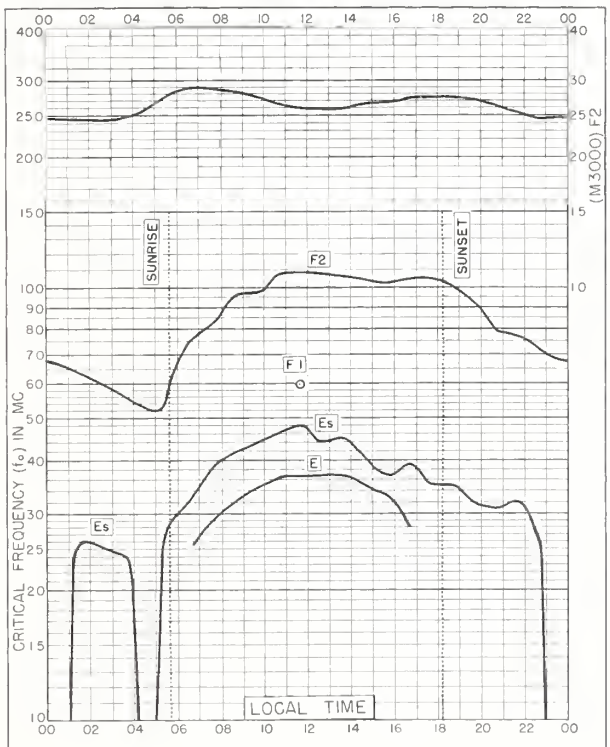


Fig. 103. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E SEPTEMBER 1958

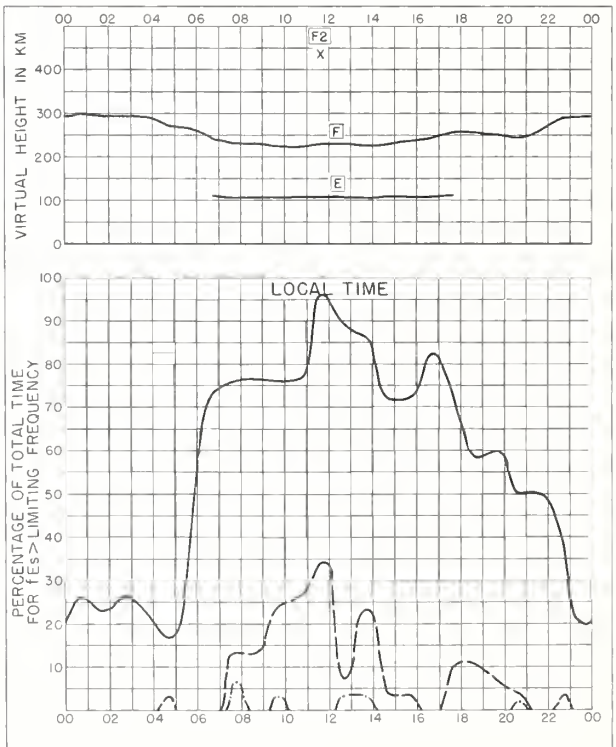


Fig. 104. LINDAU/HARZ, GERMANY SEPTEMBER 1958

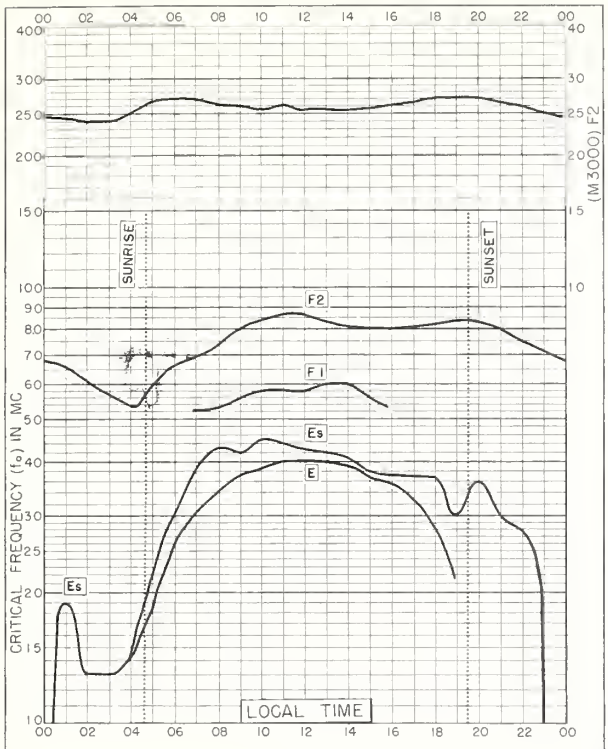


Fig. 105. JULIUSRUH/RÜGEN, GERMANY
54.6°N, 13.4°E AUGUST 1958

NBS 503

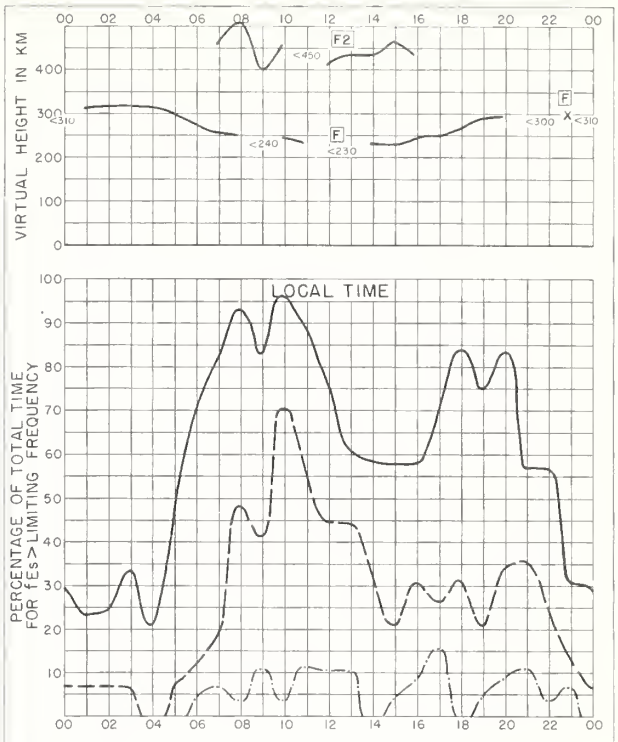


Fig. 106. JULIUSRUH/RÜGEN, GERMANY AUGUST 1958

NBS 490

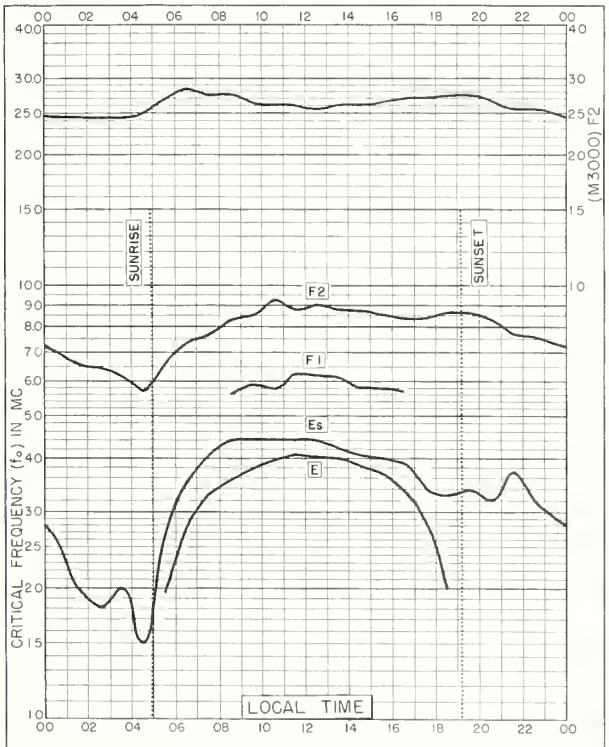


Fig. 107. FREIBURG, GERMANY
48.1°N, 7.6°E AUGUST 1958

NBS 503

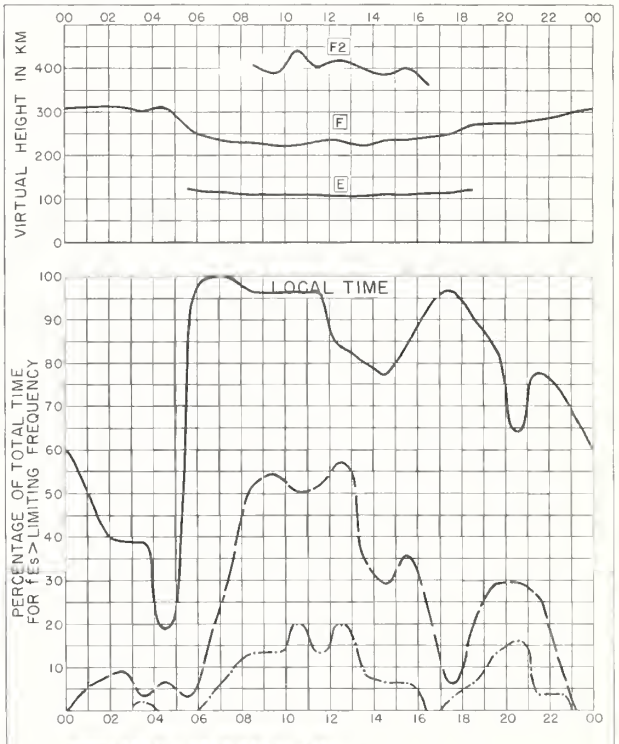


Fig. 108. FREIBURG, GERMANY AUGUST 1958

NBS 490

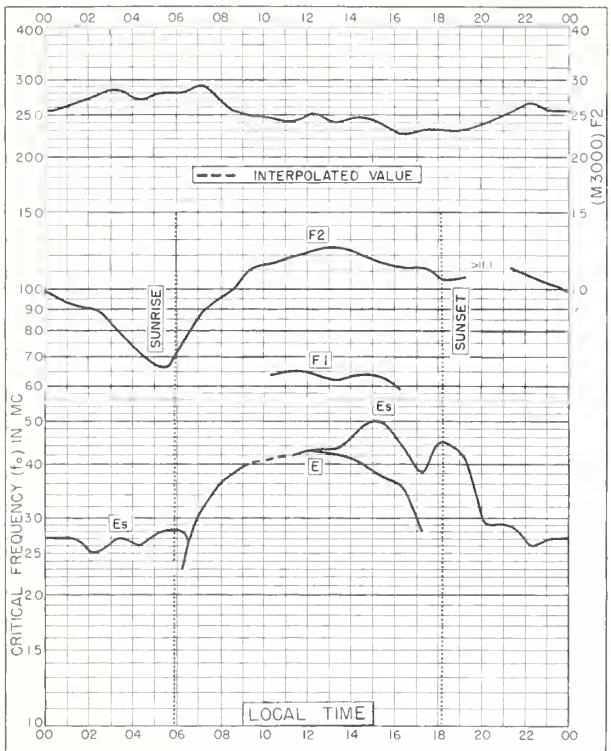


Fig. 109. PARAMARIBO, SURINAM
5.8°N, 55.2°W JULY 1958

NBS 503

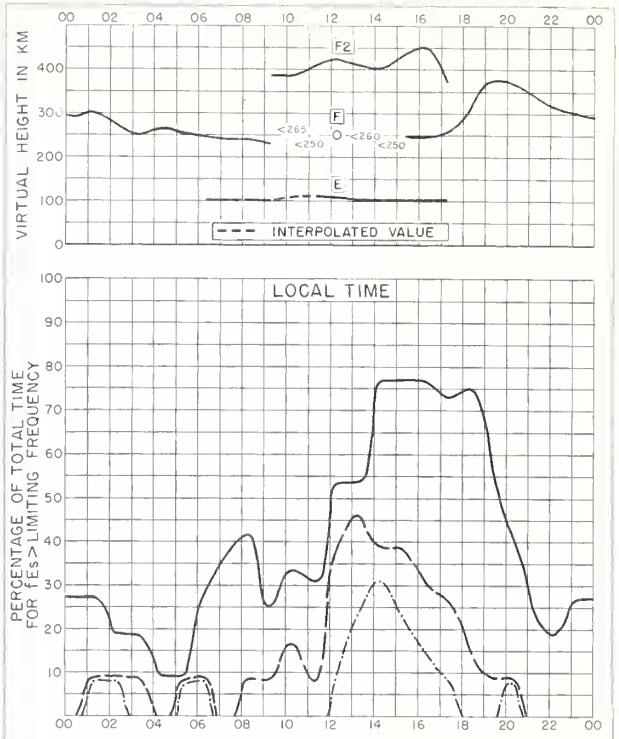


Fig. 110. PARAMARIBO, SURINAM JULY 1958

NBS 490

Fig. 111. TSUMEB, SOUTH W. AFRICA
19.2°S, 17.7°E JULY 1958

NBS 503

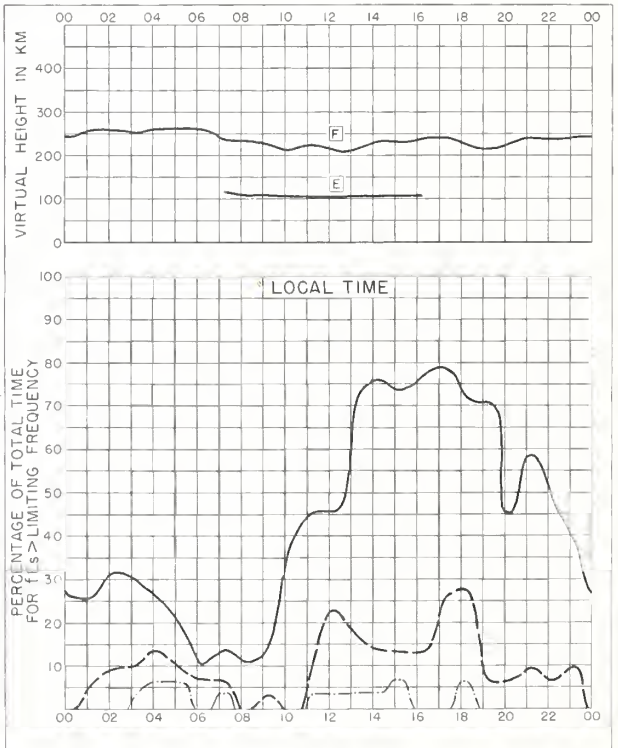


Fig. 112. TSUMEB, SOUTH W. AFRICA JULY 1958

NBS 490

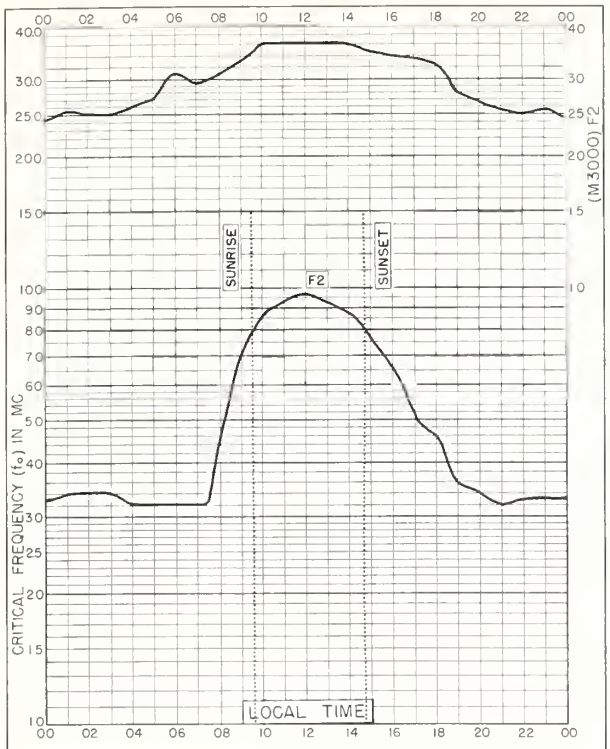


Fig. 113. DECEPCION I.
63.0°S, 60.7°W JULY 1958

NBS 503

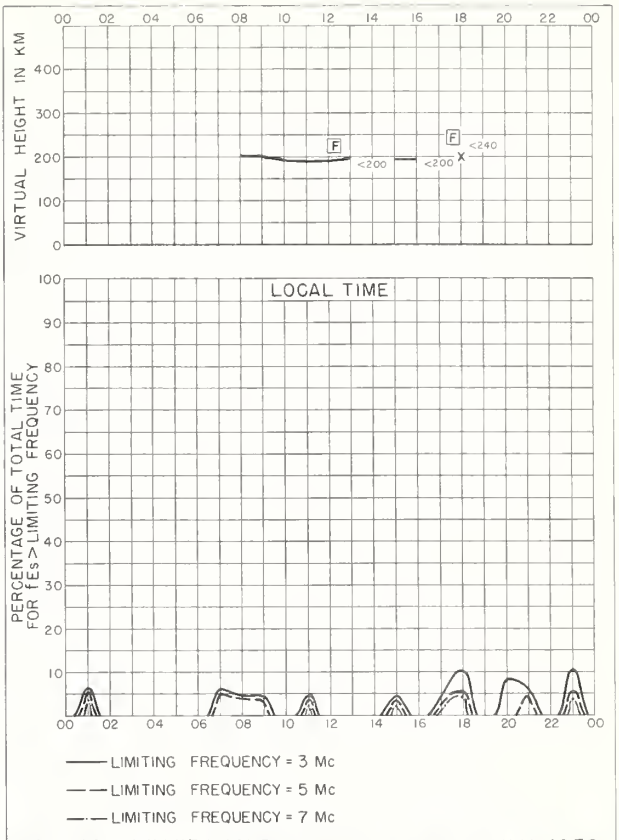


Fig. 114. DECEPCION I. JULY 1958

NBS 490

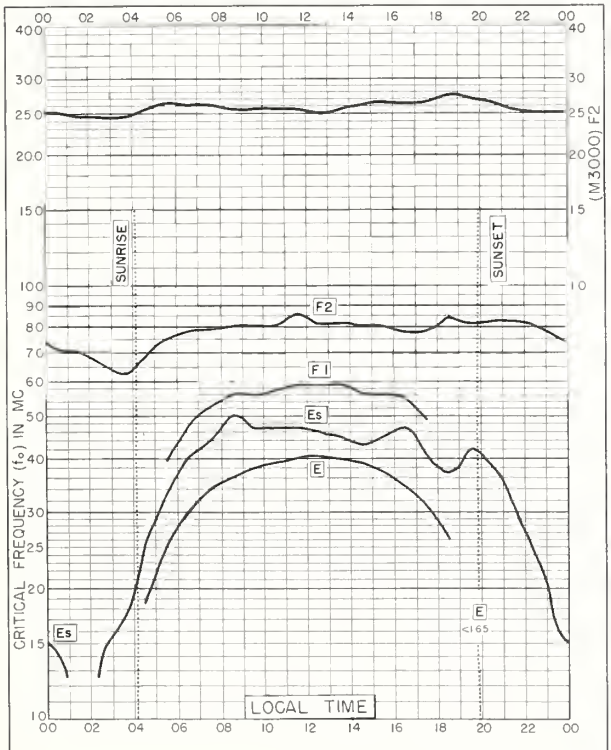


Fig. 115. FREIBURG, GERMANY
48.1°N, 7.8°E JUNE 1958

NBS 503

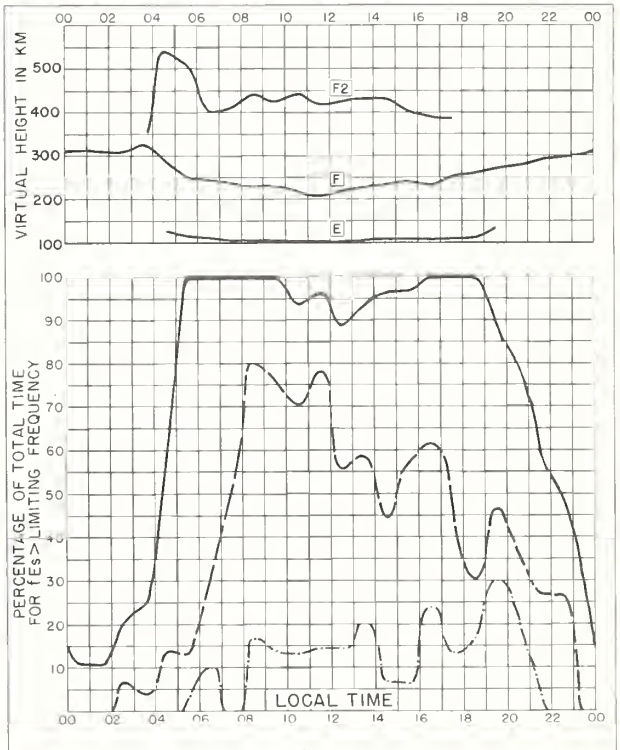


Fig. 116. FREIBURG, GERMANY JUNE 1958

NBS 490

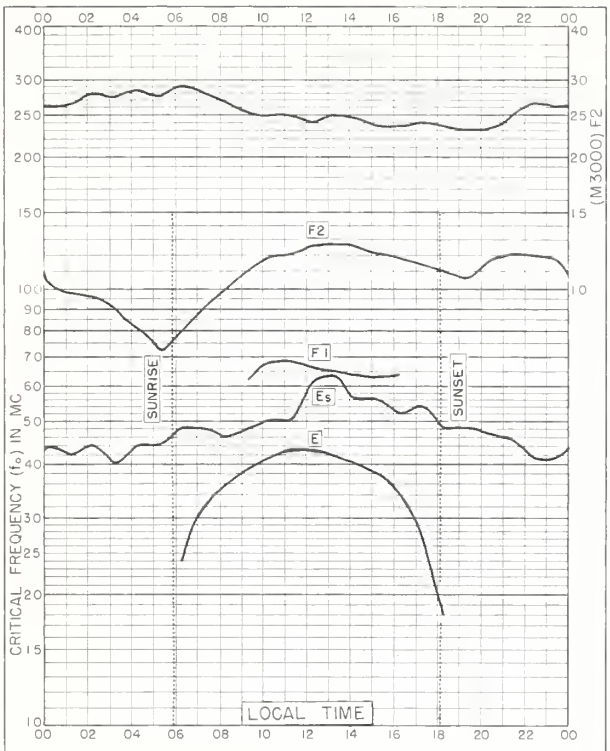


Fig. 117. PARAMARIBO, SURINAM
5.8°N, 55.2°W JUNE 1958

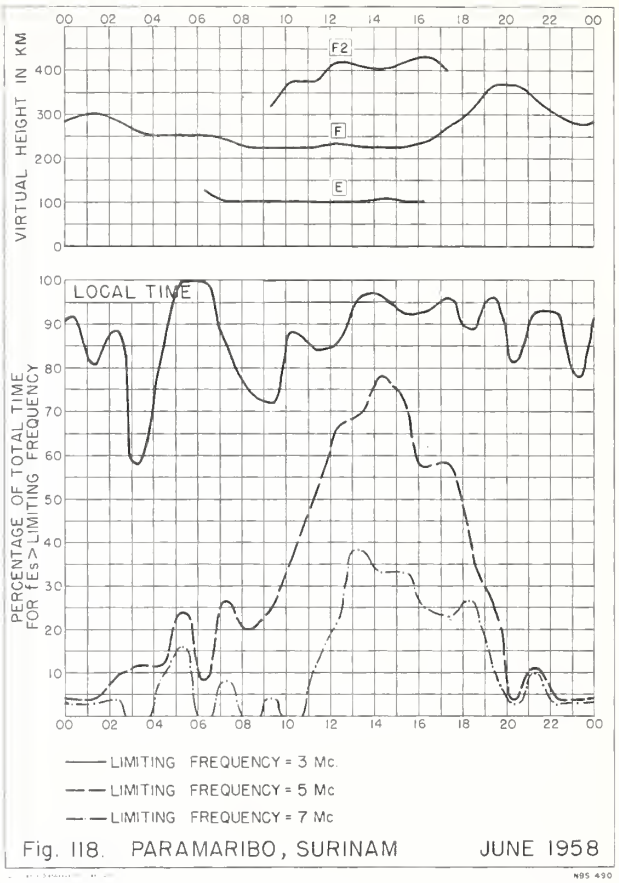


Fig. 118. PARAMARIBO, SURINAM JUNE 1958

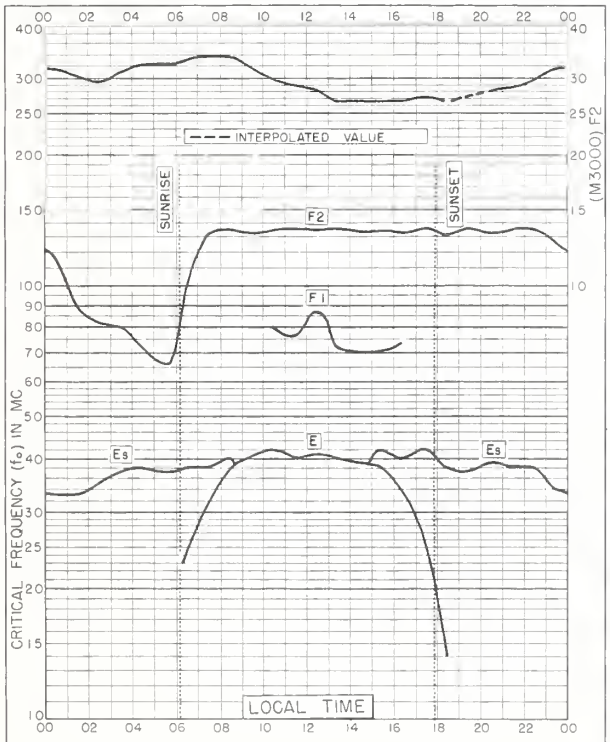
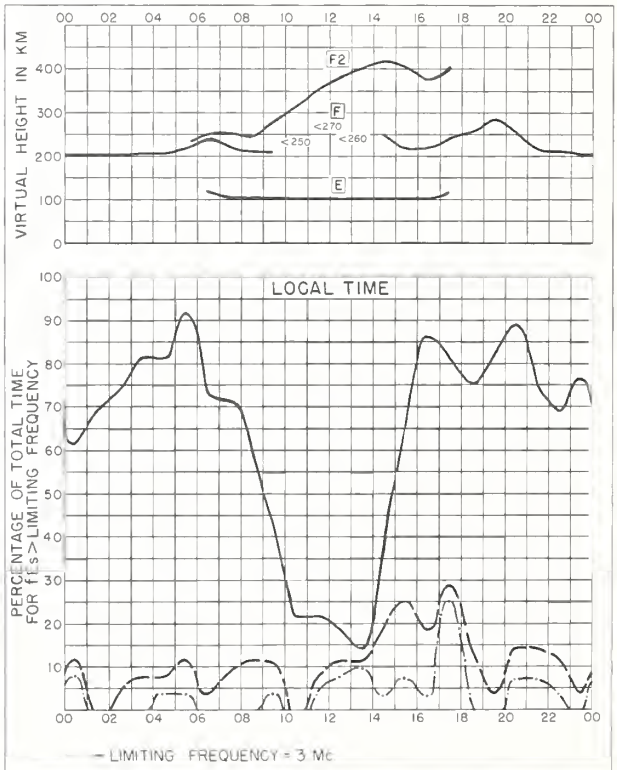


Fig. 119. HOLLANDIA, NETHERLANDS NEW GUINEA
2.5°S, 140.8°E JUNE 1958



JUNE 1958

Fig. 120. HOLLANDIA, NETHERLANDS NEW GUINEA

Fig. 121. TSUMEB, SOUTH W. AFRICA
19.2°S, 17.7°E JUNE 1958

NBS 503

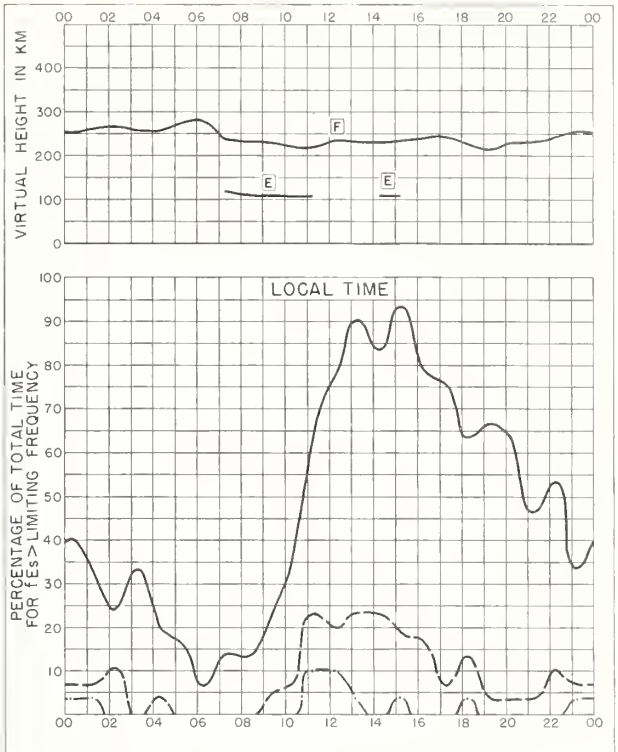


Fig. 122. TSUMEB, SOUTH W. AFRICA JUNE 1958

NBS 490

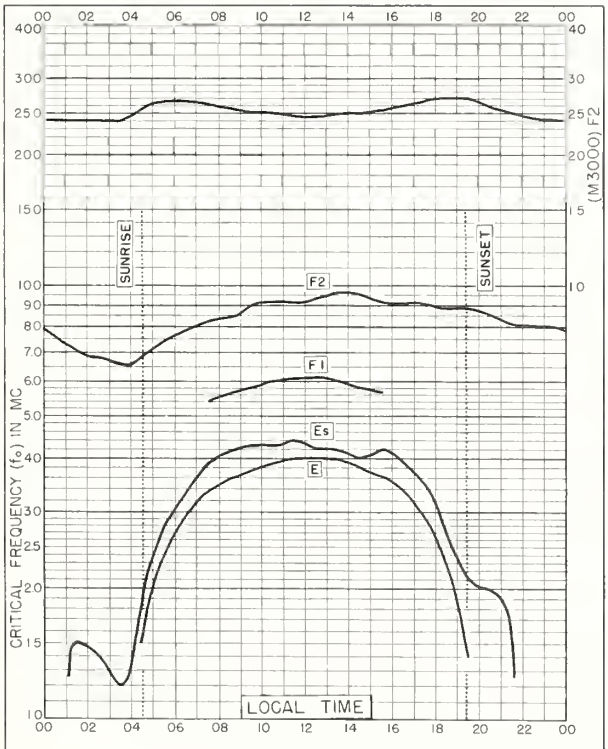


Fig. 123. FREIBURG, GERMANY
48.1°N, 7.8°E MAY 1958

NBS 503

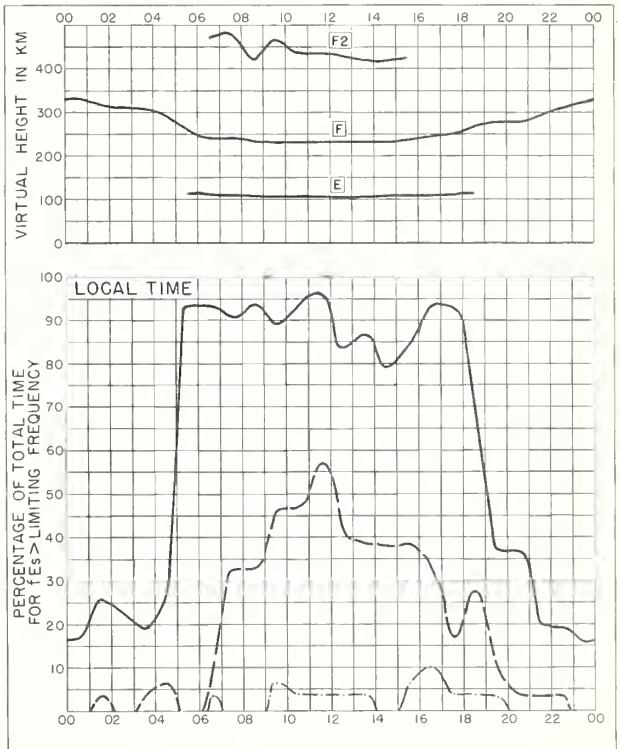


Fig. 124. FREIBURG, GERMANY MAY 1958

NBS 490

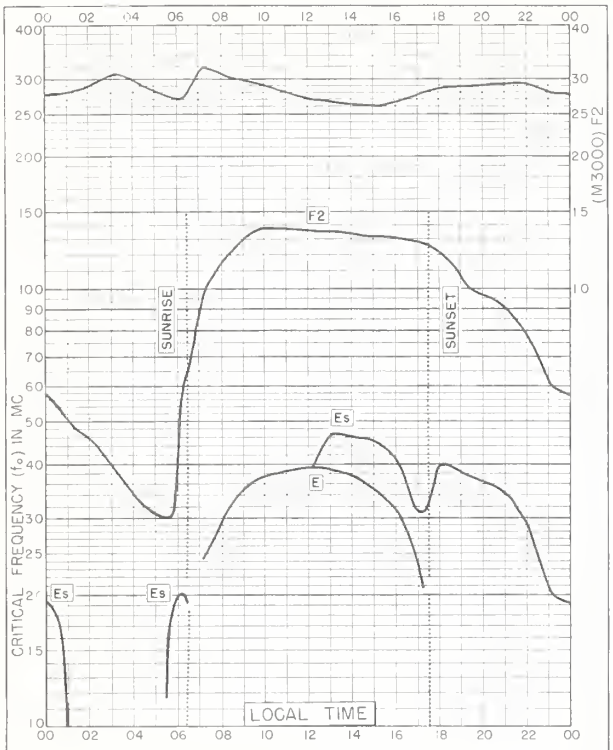


Fig. 125. TSUMEB, SOUTH W. AFRICA
19.2°S, 17.7°E MAY 1958

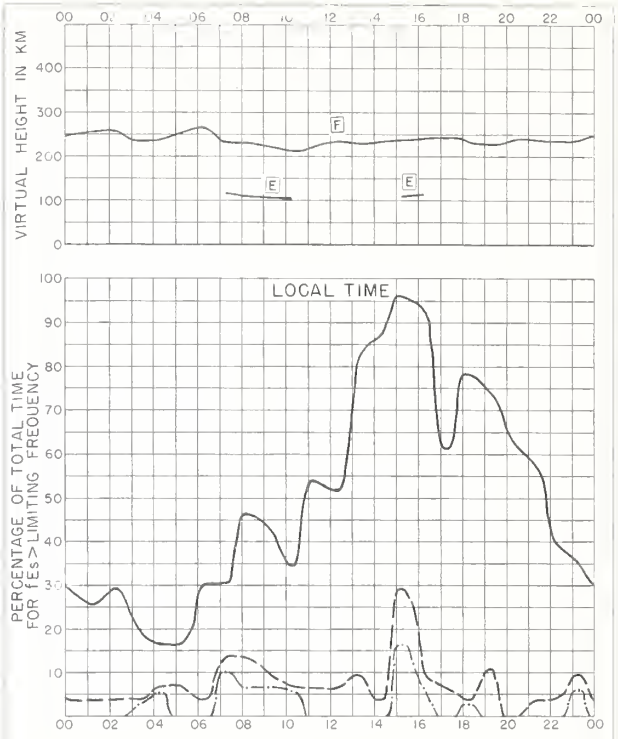


Fig. 126. TSUMEB, SOUTH W. AFRICA MAY 1958

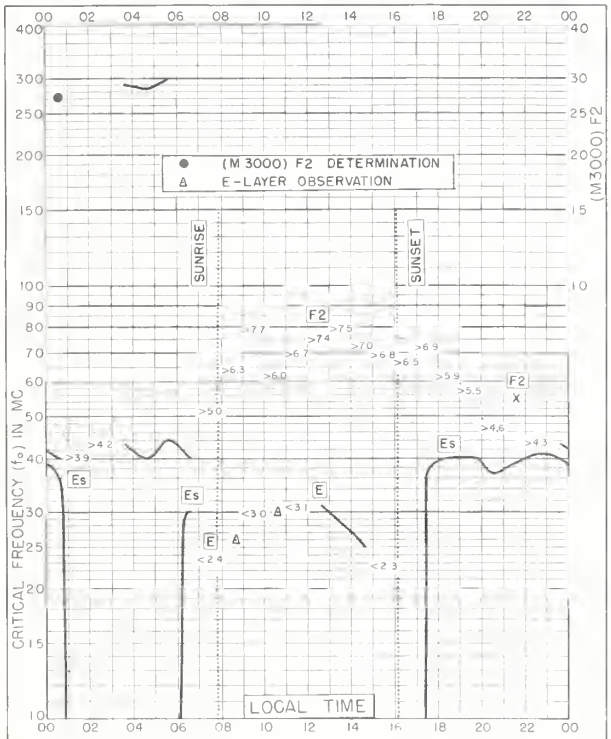


Fig. 127. MACQUARIE I.
54.5°S, 159.0°E MAY 1958

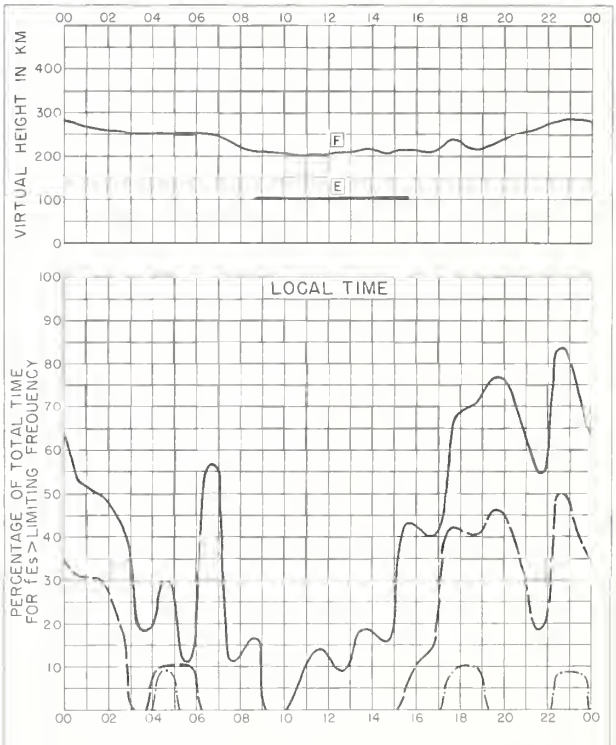


Fig. 128. MACQUARIE I. MAY 1958

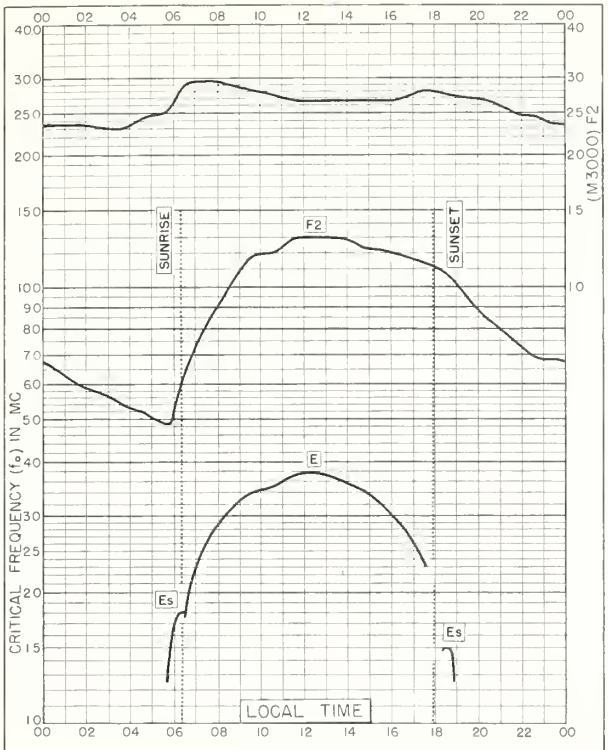


Fig. 129. FREIBURG, GERMANY
48.1°N, 7.6°E MARCH 1958

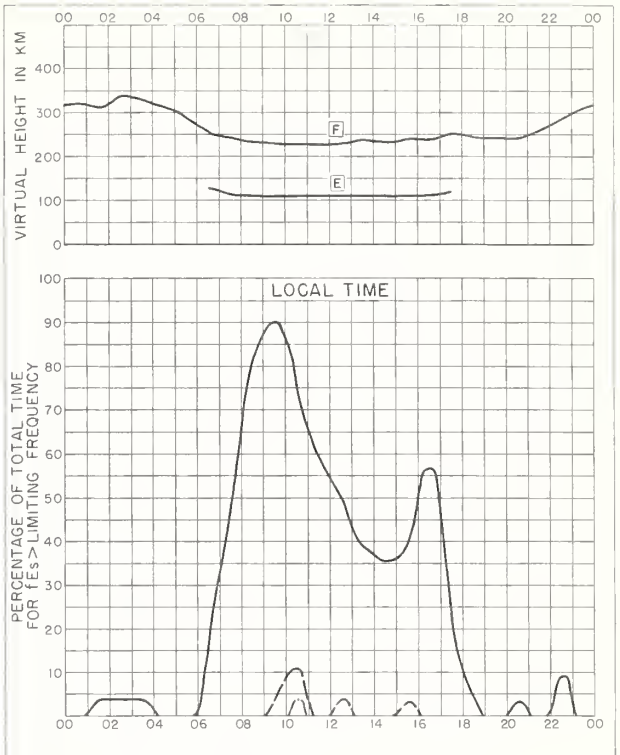


Fig. 130. FREIBURG, GERMANY MARCH 1958

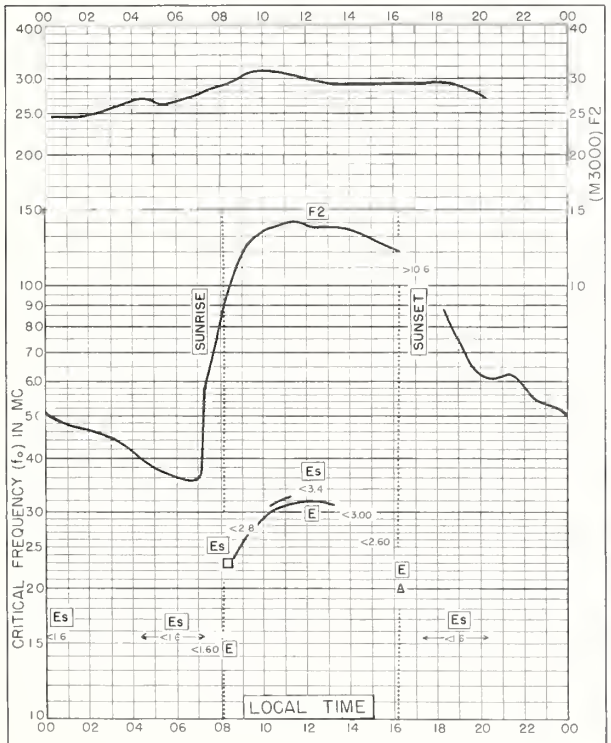


Fig. 131. DOURBES, BELGIUM
50.1°N, 4.6°E JANUARY 1958

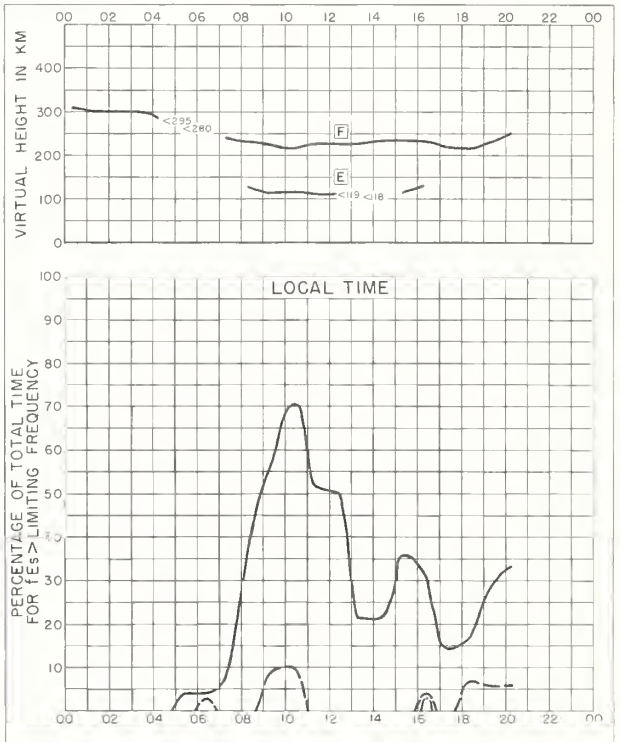


Fig. 132. DOURBES, BELGIUM JANUARY 1958

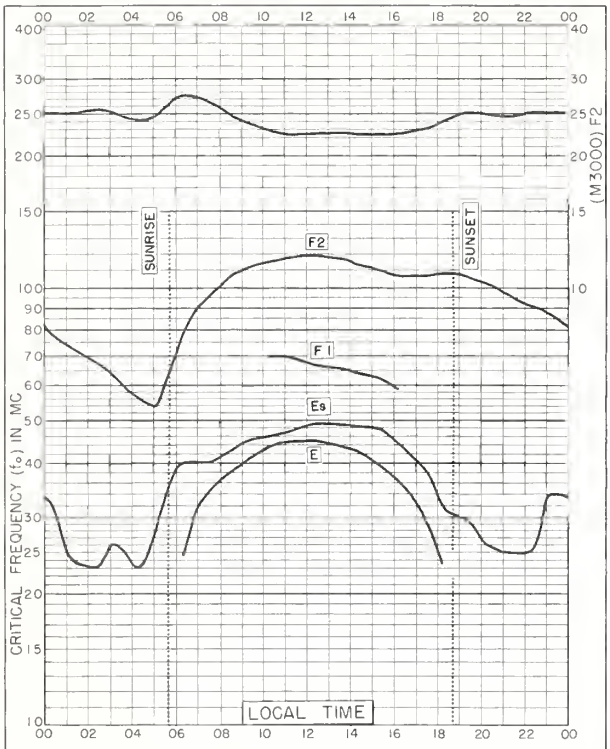


Fig. 133. TSUMEB, SOUTH W. AFRICA
19.2°S, 17.7°E JANUARY 1958

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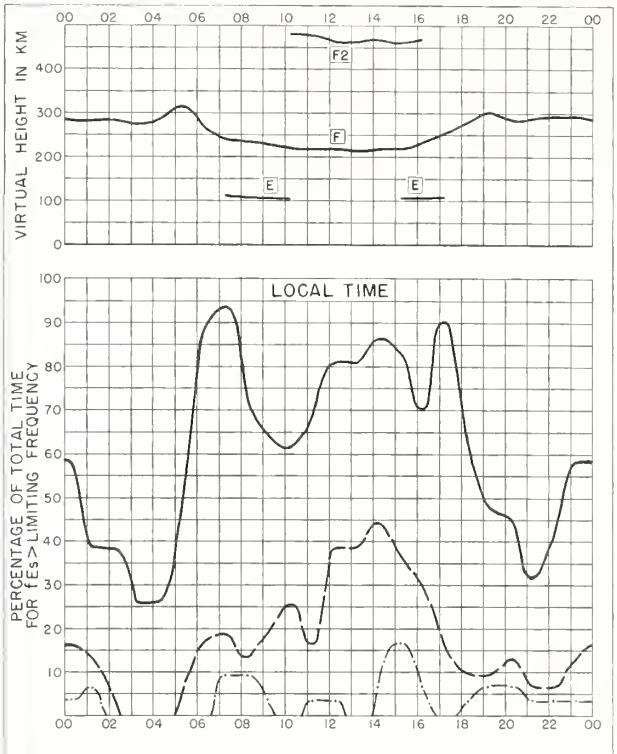

JANUARY 1958

Fig. 134. TSUMEB, SOUTH W. AFRICA

NBS 490

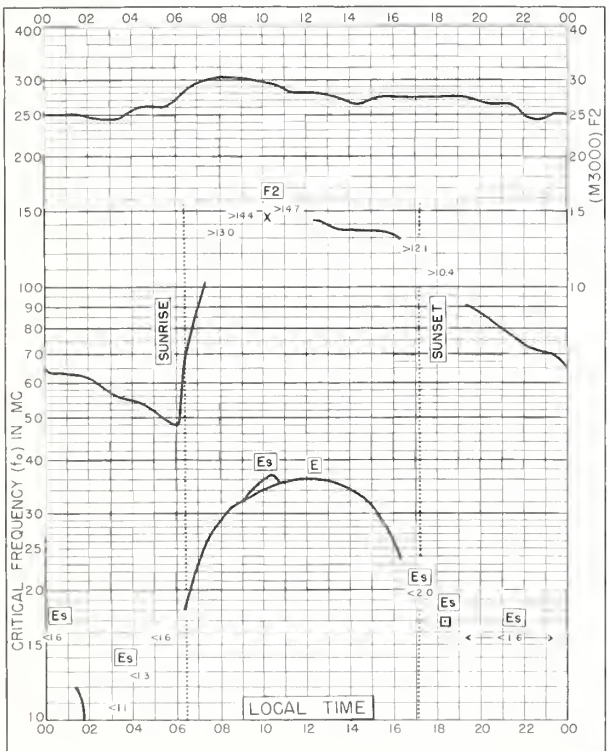

Fig. 135. DOURBES, BELGIUM
50.1°N, 4.6°E OCTOBER 1957

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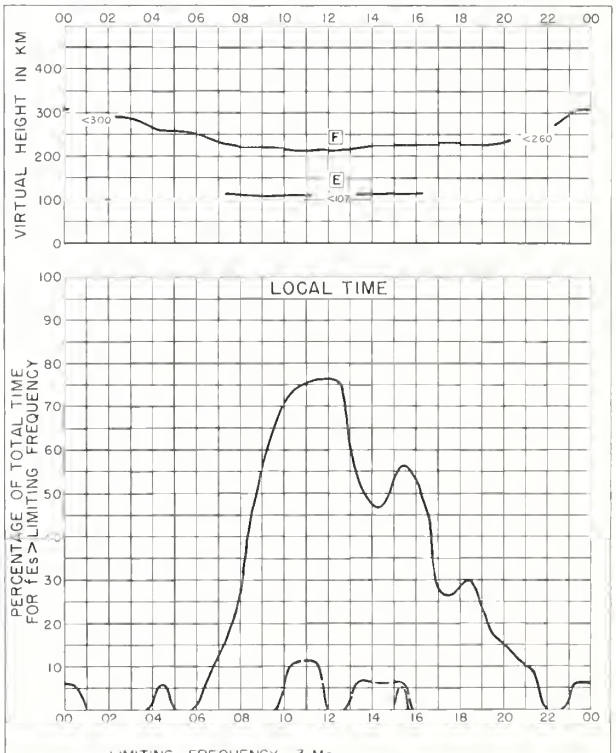

Fig. 136. DOURBES, BELGIUM OCTOBER 1957

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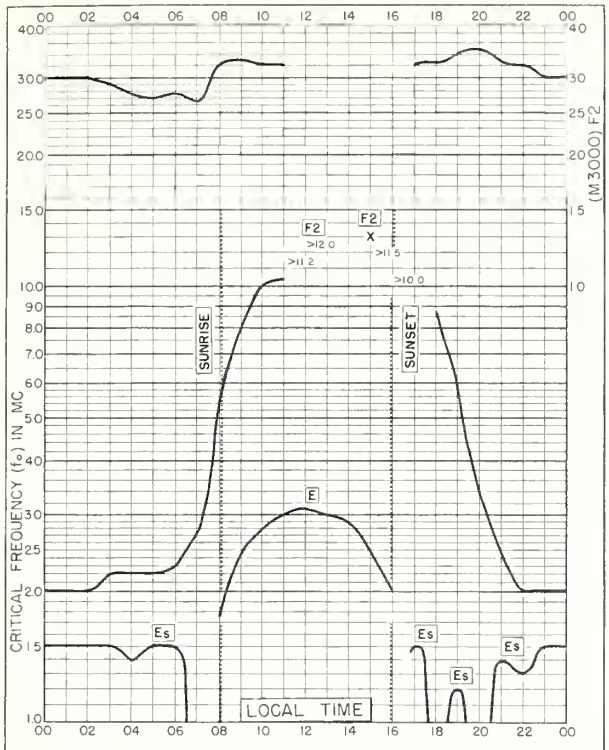

Fig. 137. KERGUELEN I.
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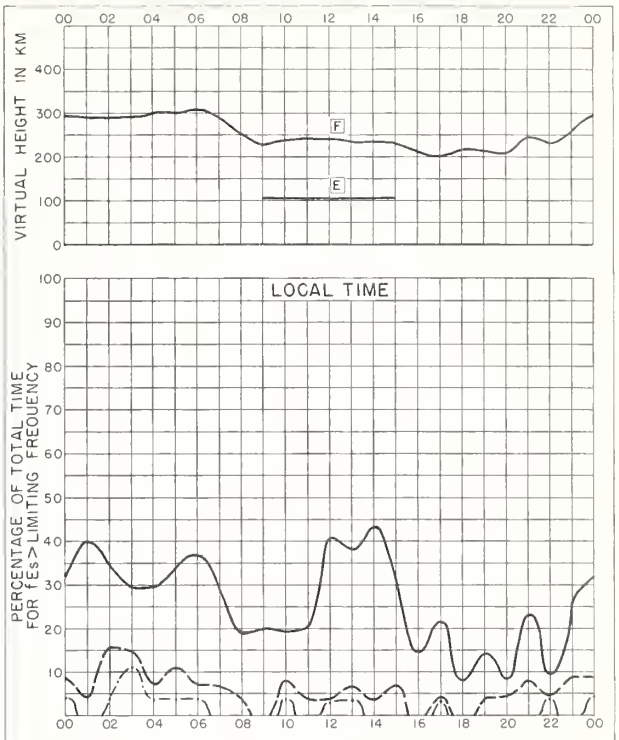

Fig. 138. KERGUELEN I. JUNE 1957

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Fig. 139. TERRE ADELIE
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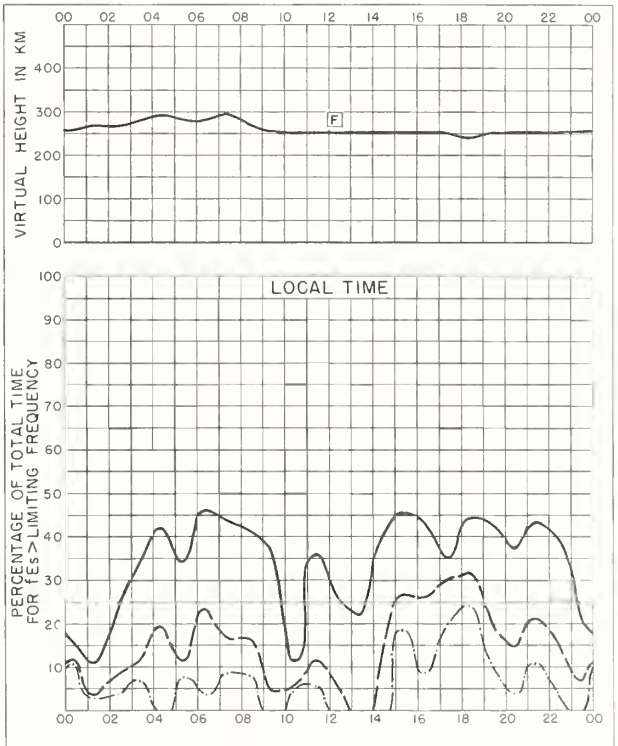

Fig. 140. TERRE ADELIE JUNE 1957

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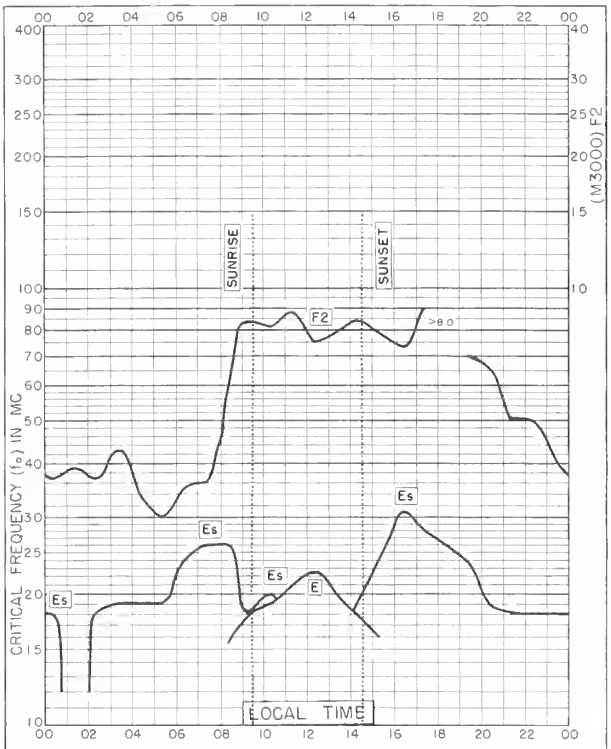

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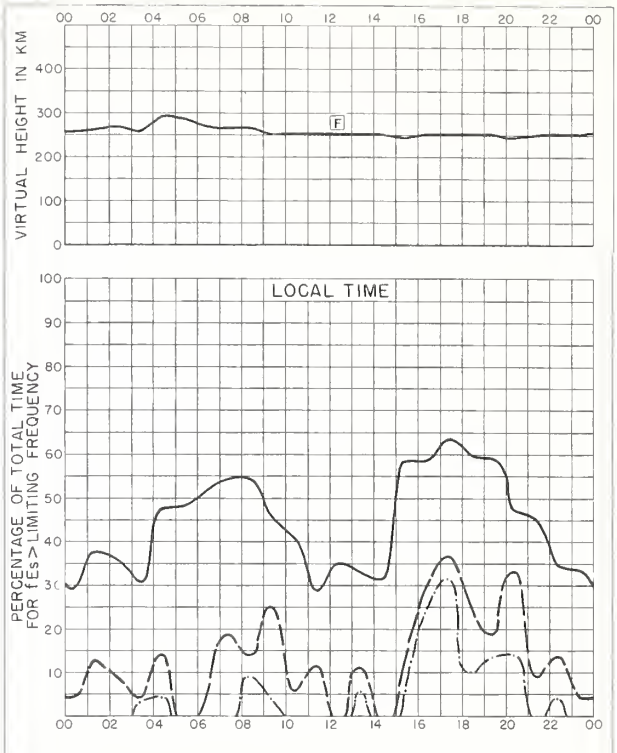

Fig. 142. TERRE ADELIE MAY 1957

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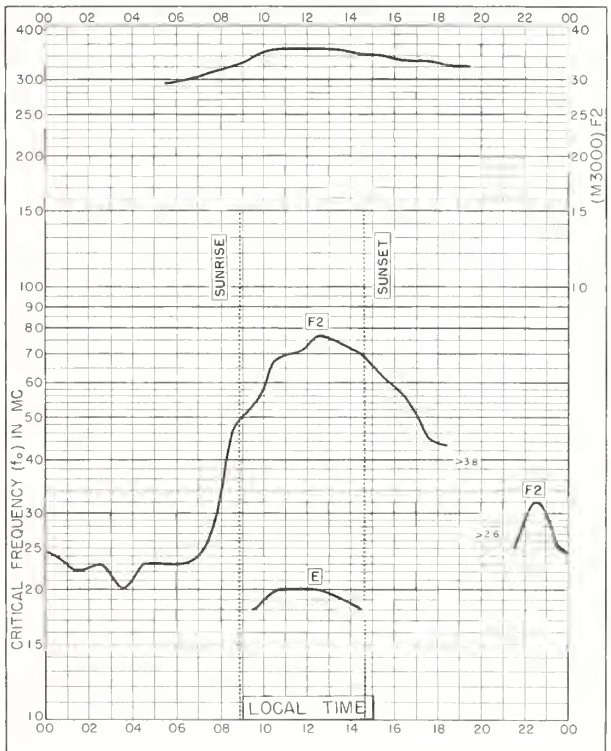

Fig. 143. LULEA, SWEDEN
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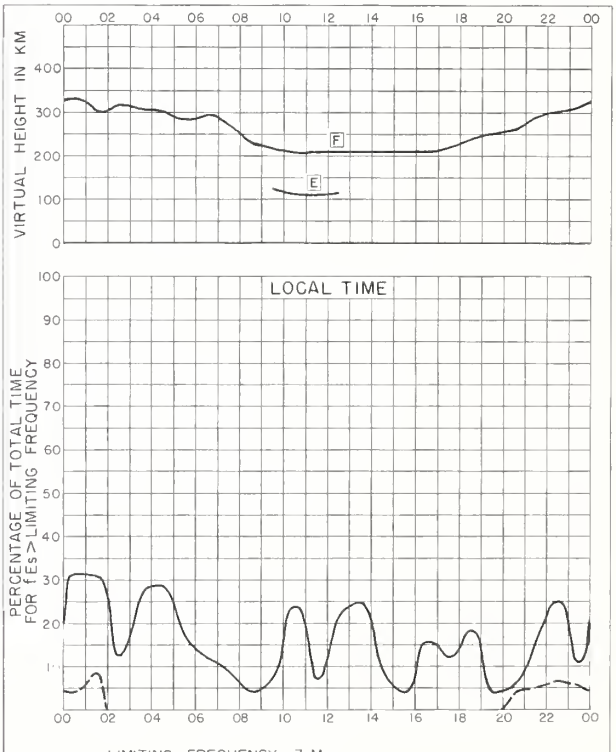

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CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

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